FOREWORD

The findings of the Unmet Needs Committee of 1947-48 prompted the faculty of Midland High School to make a professional study of a Community College as a part of the K6-4-4 plan of organization.

For the 1949-50 school year, department heads were asked to serve on this Committee together with lay people. Those lay persons who were suggested by faculty members were invited to participate. In selecting lay personnel an attempt was made to include labor, industry, press and technical representatives.

For the 1950-51 and 1951-52 school years faculty members became members of the committee on the basis of their own elections.

COMMUNITY COLLEGE COMMITTEE

Faculty Personnel

Allen, Ruth
Austin, Robert
Bare, Ernest
Campbell, Dorothy
Chamberlin, Melvin
Davies, Robert
Dersnah, Eugene
Guenther, Lawrence
Harrold, John
Hazlett, Florence
Heatley, Lynn (Chairman 1951-52)
Johns, Allen
Kingsley, Robert
Linden, John (Chairman 1949-50)
Martindale, Ula
Minikel, Dorothy
Moore, Mahlen
Perkins, Leitha
Pulkiner, Eino
Stoeri, Herbert (Chairman 1950-51)
Stoppert, Robert
Tweedie, Harold
Wagbo, Martha
Wang, William
Worcester, Dorothy

Lay Personnel

Amstutz, Forrest
Austin, Tex
Boyer, Ray
Doms, Keith
Rumple, Norman
Stoesser, Sylvia
Todd, Thane
Grose, William
Russell, Iamba
Johnstone, Arthur
Bass, Shailer

2005/38

COMMUNITY COLLEGE

I. Findings of Unmet Needs Committee 1947-48

- A. Present Junior High School Facilities
- B. A Four-year Junior or Intermediate High School
- C. Superiority of Four-year Intermediate High School
- D. Education Beyond the Tenth Grade
- E. Organization To Implement Findings
- F. 6½ Hours of a Student's Day Proposed for the Midland Public Schools

II. Grades Thirteen and Fourteen Committee

- A. Professional Study
- B. History of Junior Colleges
- C. Guiding Principles for Organizing a Junior College
- D. Present Program of College Education
- E. Educational Continuance
- F. Organization of Junior Colleges

III. Comparison of Junior Colleges

- A. Vertical Spread of Teacher Assignment
- B. Facilities and Their Use
- C. Guidance Relationships and Type of Junior College Organization - Appendix
- D. Courses Taken Out of Level - Appendix
- E. Evidence of Vertical Integration - Appendix
- F. Good Sequence of Subjects - Appendix
- G. Faculty, Departmental and Curriculum Planning - Appendix

IV. Summary of Advantages of K-6-4-4 Plan

V. Enrollments in the Intermediate Schools and the High School

- A. Grades Seven, Eight and Nine
- B. Grades Ten, Eleven and Twelve
- C. Grades Seven, Eight, Nine and Ten
- D. Grades Eleven and Twelve

VI. Michigan Junior Colleges

- A. Enrollment
- B. Tuition
- C. Per Capita Cost of Operation
- D. Sources of Funds

VII. Junior College Costs of Operation

Per Student Cost of Operation

VIII. Michigan Junior College Financial Support - 1948

IX. Estimates of Community College Enrollments

X. Pre-professional Education

A. Curricula
B. Accreditation
C. Quality of Program in Appendix
D. Transfer

XI. Terminal Education

XII. Adult Education

XIII. Athletics

A COMMUNITY COLLEGE

I. Finding of Unmet Needs Committee - 1947-48[1]

It was the finding of this committee that the junior high school should comprise grades seven to ten inclusive if the educational organization is to be consistent with the philosophy that learning is adjusted to the physical, mental and emotional growth of the learner. To keep young people together in grades seven through ten, it would seem wise therefore, from the standpoints of learning, of teaching and of administration.

The four-year intermediate or junior high school would likewise be the most economical use of investments and equipment. Under the two and three year plans the need for equipment and buildings too frequently yields to the more elaborate and expensive needs of the upper high school years. The results are that the seventh and eighth grades may receive little equipment and the students in the ninth and tenth grades are called upon to work with equipment not suited to their maturity.

Conversely, if equipment is supplied to suit the needs of the early teen ages then duplications for the seventh and eighth grades and for the ninth and tenth grades occur when they are housed in seperate buildings. If the ninth and tenth grades are housed with the eleventh and twelfth, in some communities, the latter will suffer from the lack of equipment suited to their maturity except at additional expense.

CONCLUSIONS

A. Present Junior High School Facilities

The committee is unanimous in its conclusion that the educational housing problems of the seventh and eighth grade level are acute and will be remedied best by the construction of new facilities to house grades seven through ten together. The problems presented by the present junior high school consisting of seventh and eighth grades are threefold.

1. A physical plant which is highly inefficient and entirely inadequate, as example for instruction in physical education, shop, science laboratories and home economics. All of the requests for improved educational facilities presented by staff of these two grades point to the fact that merely a remodeling of the present building would be unlikely to give facilities required for good educational program.

2. A two-year program is too short and educationally it is seriously inefficient. A transition period of two years between the elementary grades and a well integrated four-year high school program does not permit enough time either to remedy weaknesses in the students training or to start him properly on the way to a good foundation for a general or vocational education.

3. The committee feels that a break at the eighth grade however traditional is purely arbitrary when viewed from considerations of the child's physical and psychological development and his educational interests and abilities. All indications point to the fact that a better break would be at the end

of the tenth grade. It is therefore recommended that Midland School District reorganize its curriculum and administrative units in the secondary levels of education to conform to the four-year intermediate high school pattern which meets the educational needs and development of the child most satisfactorily.

B. A Four-Year Junior or Intermediate High School

It is recognized that building a four-year school for grades seven to ten practically commits the school district to the K 6-4-4 plan. A committment which the committee strongly endorses and recommends.

The new intermediate high school should be equipped with a gymnasium and physical education facilities as well as facilities for homemaking courses, cafeteria, shops, laboratories, library, visual education study and assembly rooms adequate for a modern school of this size and proposed curriculum.

The intermediate high school should hold graduation exercises granting a certificate to every student completing its requirements through the tenth grade.

The intermediate high school should have a strong intramural athletic program and should probably engage in limited inter-city competition with athletic teams of ninth and tenth grade levels from other high schools.

The intermediate high school should offer a well founded education integrated to the needs of those planning to take higher education. It should also offer courses of instruction with accent on science, industrial arts, homemaking and commerce

for those intending to pursue their formal education toward a college degree.

C. Superiority of Four-Year Intermediate High School

The advantages of the four-year junior or intermediate high school organization have been demonstrated by a number of school systems in which the plan has operated for several years.

A statistical study of such systems is reported by Professor L. V. Koos (2) a chapter of whose book is devoted to the superiority of the four-year junior high or intermediate high school over the three high school. His study was made of seventeen four-year schools compared with thirty-four three-year schools. In each group there was about the same distribution of size and enrollments in grades seven through nine. Namely from schools of about 300 to those of about 1250 with the median about 650 pupils.

The school studied was distributed by states as follows:

Four-Year Schools; eleven in California composing Compton, five, Pasadena, three, Pomona, two and Ventura, one. Three in Kansas; Parsons, two, Pratt, one. One in Missouri; Jefferson City. One in Oklahoma; Bartlettsville.

Three-year schools; six in California, Indiana and Ohio. Three each in Illinois, Iowa, Kansas, Michigan. Two each in Minnesota and Missouri.

The data collected in Koos study show conclusive that:

1. The program of studies is richer. The average number of different classes offered in the first three years in the

school was 45.65 and for the three year school was 33.32.

2. The presence of grade ten stimulated a wider and more attractive non-athletic extra curricular program particularly in such areas as pupil government, school service, social groups, leadership and activities and guidance.

3. The daily schedule of four-year schools call for more time for guidance of students by teachers. Periods with the same teachers tended to be longer.

4. The preparation of instructional staff was found to be better in the four-year schools as reflected by a smaller number of teachers without degrees, a larger with advanced degrees, a far greater percentage of men teachers and better qualified staff members in special areas like guidance, etc.

5. A more economical use was made of special rooms like laboratories, shops, health service rooms, music rooms, library, etc.

If these advantages of the four-year junior high over the three-year junior high are so great, then the present two-year program can hardly be defended at all.

EDUCATION BEYOND THE TENTH GRADE [1]

D. Community College

At present the educational offering of Midland ends formally with the twelfth grade. The committee is unanimously agreed on the desirability of extending the local educational offering through the fourteenth year. Available in the same way that education through the twelfth grade is now available. This

school would be known as the community college offering work from grades eleven through fourteen inclusive. One community college would serve the entire natural community of Midland.

E. Functions of the Community College

It is the feeling of the committee that the community college in Midland would serve at least four functions.

First, it should be the function of the community college to provide fully recognized and accredited courses in the thirteenth and fourteenth years which can be transferred to any college or university without loss of credit to those wishing to obtain education at a senior college level. The opportunity for college training as well as high school training should be available to a greater number of young people than to the sons and daughters of those who are financially able to provide advanced schooling for their children. The Harvard report (2) reveals that from the middle and lower income groups which produce more than 93% of the children half of them drop out of high school and very few enter college.

A second function of the community college in Midland should be to offer terminal courses for those young people who wish to enter employment as soon as their physical maturity is acceptable to the state, employer and the trade. Already the demand for such courses is large. For instance in the academic field the science program of Midland High School is now outgrown the usual four years of high school. For one to complete the present science program would require an additional year. If the student was to take additional training in an associated field such as mathematics, English or social studies as he

completed the present science program, this could very well extend into a two-year program. There is no doubt that what the community needs for better and more completely trained laboratory assistants in the future will necessitate completion of at least a two-year science program beyond the high school before they are eligible for positions in local chemical industry.

The commercial and industrial arts and the agricultural programs have also outgrown the usual four years of high school offering. In all probability the needs for better and more thoroughly trained office personnel will necessitate considerable expansion in the commercial program in the next few years. For a student to complete such a program would require one additional year beyond high school, preferably two. And in the industrial arts program, machine and woodshop, mechanical drawing and auto mechanics very much the same is true as is true of science and commercial. In agriculture some of the most effective school experience are those of the post high school level and the present teaching load of the present high school level in agriculture is now demanding a second teacher.

A third function of the community college in Midland should be to make it possible for further training of those already employed. This function opens a way to a cooperative work-experience program with the employers with material benefits to the employed student and the employer. It also opens a way to a comprehensive well organized adult education program both for the up grading in employment and for cultural or recreational purposes.

A fourth function of the community college is in reality a summation of the preceeding three. A community college in Midland should provide those learning experiences which make for a more complete efficient and happy life for the learner. This latter function is usually described as a general educational function of a community college.

E. Organization To Implement Findings

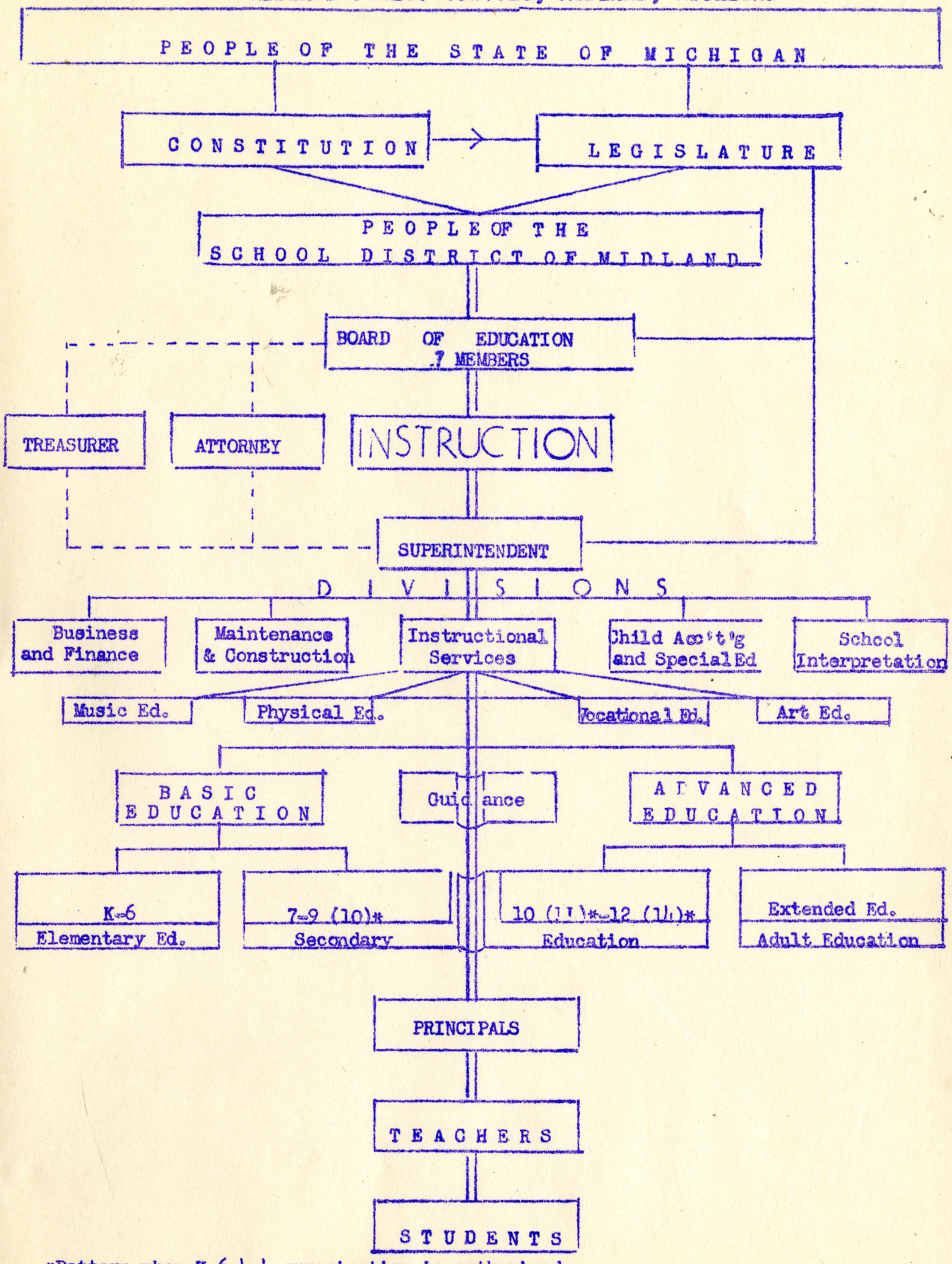
If Midland is to adopt a school organization pattern suggested by the Unmet Needs Committee of 1947-48, then graphically we would have an organization represented by the Organization Chart No. 1. As we glance down through this chart from the top, let's stop about midway down under the heading of "divisions" and note that all of these "divisions" are in operation at the present time such as Business and Finance, Maintenance and Construction, Instructional Services, Child Accounting, Special Education and School Interpretation. The directors of special areas of education such as music education, physical education, vocational education and art education have already been established. In order to make the maximum use of the abilities of these directors in the special fields of education, it is necessary to establish a pattern of working relationships kindergarten through the fourteenth grade with the proper division of administrative duties and the necessary horizontal organization as far as guidance and other function are concerned.

Basic Education

It soon became apparent that if kindergarten through the tenth grade was to serve the needs of the students as it is intended to do in the K 6-4-4 plan, then some individual as an

ORGANIZATION CHART NO. 1

MIDLAND PUBLIC SCHOOLS, MIDLAND, MICHIGAN



*Pattern when K-6-4-4 organization is authorized.

administrator must be responsible for this entire program. With that in mind the position of coordinator of basic education was established. And as the chart shows his responsibility extends from kindergarten through the tenth grade. At least it will extend through the tenth grade when the K 6-4-4 organization is adopted.

Advanced Education

It also became apparent that the advanced education area would not stop at the twelfth grade but would continue through the fourteenth grade and on into adult education beyond the fourteenth grade. With this in mind a director of advanced education will be established whose duties begin with the eleventh grade and extend through the fourteenth grade and on into the adult education program as is shown by Chart No. 1. This organization has already been effected as far as a director of basic education is concerned and to some extent as far as advanced education is concerned. In case of advanced education we find that a director over this entire program seems to be a very workable type of organization in that the needs of persons at the adult education level, in some instances at least, are very similar to the needs of the persons in grades eleven through fourteen. If the director of advanced education's work develops as it appears to be developing now, his responsibility should include as well the organization and direction of any graduate work in the community. In effect this is partly in operation at the present time.

In Chart No. 1, I have called your attention to the new part of the organization which is different from that which existed before a findings of the Unmet Needs Committee of 1947-48 were made known and partly implemented.

F. 6½ Hours of a Student's Day Proposed for the Midland Public Schools

This is shown in Chart 1 and is actually a continuation of the bottom of Chart 2 in the portion marked "students". We are particularly interested here in the so called "intermediate level" comprising grades seven, eight, nine and ten and age levels roughly twelve through fifteen and also grades eleven, twelve, thirteen comprising age levels sixteen, seventeen, eighteen and nineteen.

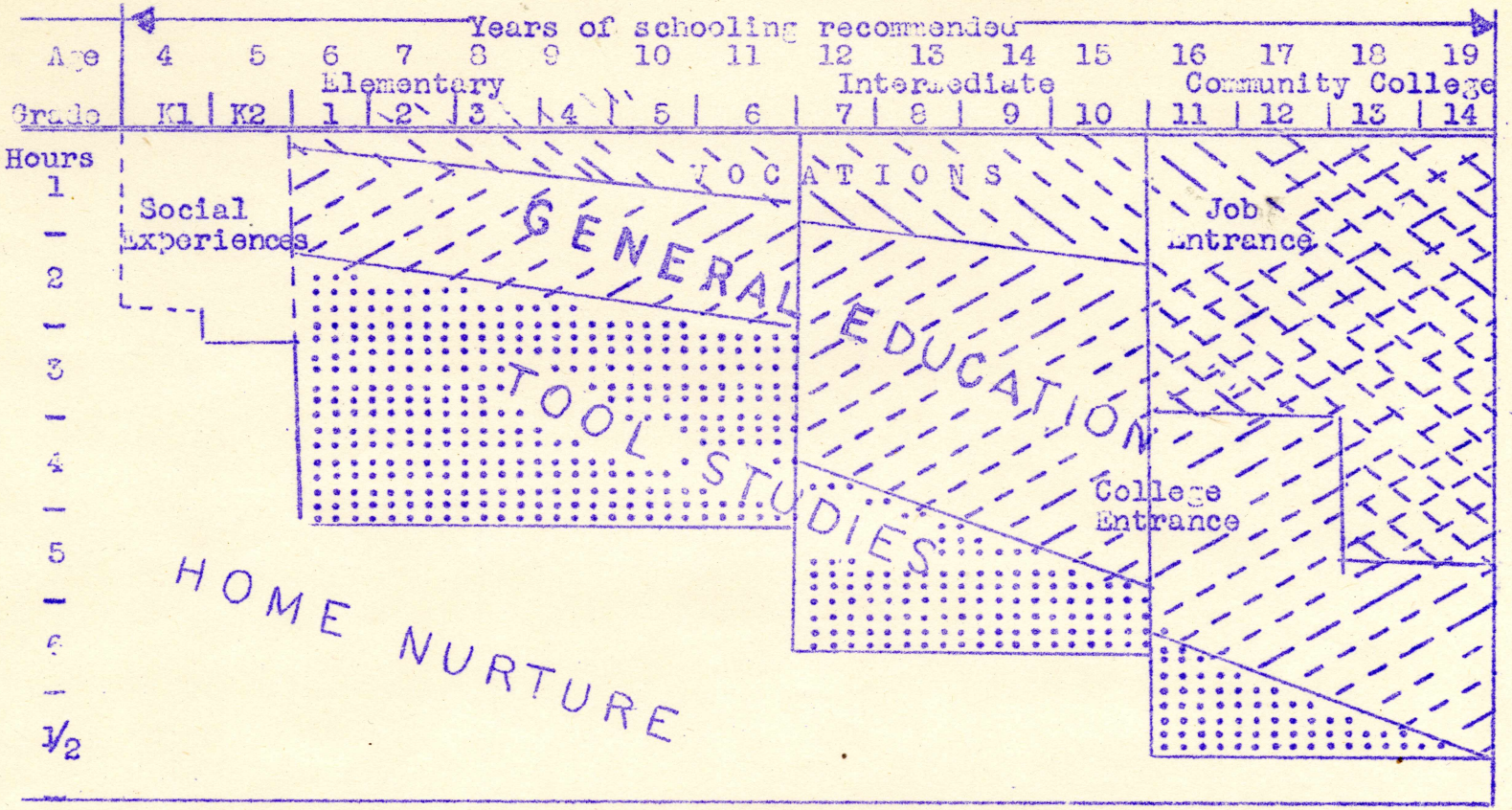
Beginning at the left in the kindergarten considerable time is spent upon social experiences and as we go to the right the time of the student's day is divided up between teaching of vocations, general education and the tool subjects. Of these three areas probably the one area that is least understood, because it is comparatively new, is the so called general educational area. In order that we all understand what we mean by general education and that we do finally come to realize that general education is a new term applied to old concepts.

The Purposes of General Education

The purposes of general education should be understood in terms of performance, behavior, not in terms of mastering particular bodies of knowledge. It is the task of general education to provide the kinds of learning and experience that will

Chart 2

6½ HOURS OF A STUDENT'S DAY
PROPOSED FOR THE MIDLAND PUBLIC SCHOOLS



GRADE LEVEL FUNCTIONS

Orientation — Introduction — Adjustment — Fixation — Exploration — Adaptation — Application

AIMS OF EDUCATION

1. Self-Realization
2. Human Relationships
3. Civic Responsibility
4. Economic Efficiency

enable a student to attain certain basic outcomes among them the following:

1. To develop for the regulation of one's personal and civic life a code of behavior based on the ethical principles consistent with democratic ideas.
2. To participate actively as an informed and responsible citizen in solving the social, economic and political problems of one's own community, state and nation.
3. To recognize the inter-dependence of different people of the world and one's personal responsibility for fostering international understanding and peace.
4. To understand the common phenomena of one's physical environment and to apply habits of scientific thought to both personal and civic problems and to appreciate the implications of scientific discoveries for human welfare.
5. To understand the ideas of others and to express ones own effectively.
6. To attain satisfactory emotional and social adjustment.
7. To maintain and improve his own health and cooperate actively and intelligently to solve the community health problems.
8. To understand and to enjoy the literature, art, music and other cultural activities as expressions of personal and social experience and to participate to some extent in some form of creative activity.
9. To acquire the knowledge and attitudes basic to a satisfying family life.

10. To choose a socially useful and personally satisfying vocation that will permit one to use to the full his particular interests and abilities.
11. To acquire and use the skills and habits involved in critical and constructive thinking.

A summary of these eleven purposes of general education can best be given in the following way: General education therefore will concentrate not alone on the mastery of the fundamental skills including the 3 R's but on a fullest possible development of motives, attitudes and habits that will enable a student to inform himself and think for himself throughout life. It will stress, first, the importance of being informed of basic decisions, actions and opinions on accurate facts. Second, knowledge of where and how to acquire information and third, ability to appraise, relate and integrate facts in order to form valid judgements. The habit of making this approach to any situation can best be developed by leaving the student to apply it at every opportunity in his life on the campus in solving problems both inside and outside the classroom.

Grade Level Functions

The grade level functions at the bottom of the Chart 1A are self-explanatory. The last one application at the far right leads us into the job entrance type of program. It is hoped and is a fundamental necessity that in the terminal education program of a community college must be developed. This type of a program would be similar to the one that's already in existence in a business-education field in Midland High School and to a very

limited extent in the science field in Midland High School. We have found this cooperative work experience program to be very valuable training to the students since the student receives in one portion of the day related instructions in subject matter material in school and the other portion of the day actual work experience on the job.

Aims of Education

The four aims of education shown at the bottom of Chart 1 are the aims for the entire school program kindergarten through the fourteenth grade. The first three aims self-realization, human relationships and civic responsibility could very easily be designated as the three aims of general education. The fourth one economic efficiency necessarily depends upon vocational aptitudes and training and is the aim essentially in that area of instruction for the student.

II. Grades Thirteen and Fourteen Committee

A. Professional Study

As soon as the findings of the Unmet Needs Committee of 1947-48 were made public the high school faculty began to realize that someday they would be called upon to give professional information concerning the program that could be developed in the grades eleven through fourteen. With this in mind one of the regular professional committees of the faculty has been designated as the "Committee on Grades Thirteen and Fourteen" and we have made a continuous study since that time of this program.

B. History of Junior Colleges

In order to get a better understanding of private junior

colleges, public junior colleges, junior colleges for women, for men, cooeducational junior colleges, those under state control, those under local and those under federal control a study was made as is shown in the Charts A, B, & C in the Appendix.

In fact all of the professional information that this faculty committee have been able to accumulate has been put in form of charts. Then after they were all assembled and totaled some fifty-four or fifty-five in number persons who had worked on the accumulation of information were asked to pick out the twenty charts that they believed would best portray to the laymen the necessary information about a community college program that he or she would need in order to determine whether or not Midland should attempt this program. The first twenty charts have been placed in the contexts of this report and the other thirty some charts have been placed in the appendix.

If we refer to Chart A of the appendix we find here represented a geographical distribution of the private junior colleges throughout the United States. We find a very heavy concentration of these junior colleges in the New England States and the Middle Atlantic States. Private junior colleges are for the most part the freshman and sophomore years of a standard four-year college transported to some community. They are not local in the respect that they do not depend entirely upon local communities for their students. Many of their students come from quite some distance. Because of this they have the supervision of the housing program for this type of an institution. This absorbs considerable time of faculty members. Since they do not depend upon the local community for support they in turn do not feel it a necessity to

develop a terminal education program to fit the needs of the local community nor do they develop an adult education program for that community.

As we move westward across the United States we see that the concentration of the private junior colleges becomes less and less.

Public Junior Colleges[11]

Let us refer to Chart B of the appendix. We find that as our population moved westward and our educational ideas developed along with this westward movement of population it became more and more the responsibility of the community for the education of the youth and less and less the responsibility of the individual family. So it was only natural that the public junior college should grow rather rapidly in interest with this westward movement. In refering to Chart B we find that this is true. A very large number of public junior colleges in the midwest states, in the south and in California. Notice that most of the public junior colleges are coeducational under local control whereas the private junior colleges in Chart A many were either for women or for men and not locally controlled.

Tuition-Free Junior Colleges

The tuition-free junior college are primarily those junior colleges that have developed since our educational thinking indicated that to some extent it is the obligation of the state to furnish the education for students up through the twelfth grade and in many cases through the junior colleges years. As a result starting with the midwestern states and moving on west-

ward we find many tuition-free junior colleges. In most cases, they are tuition-free on a state wide basis.

The only tuition-free junior college in Michigan is Highland Park and since we do not have a state system of tuition-free junior colleges Highland Park is tuition-free only to the students residing in the Highland Park School District.

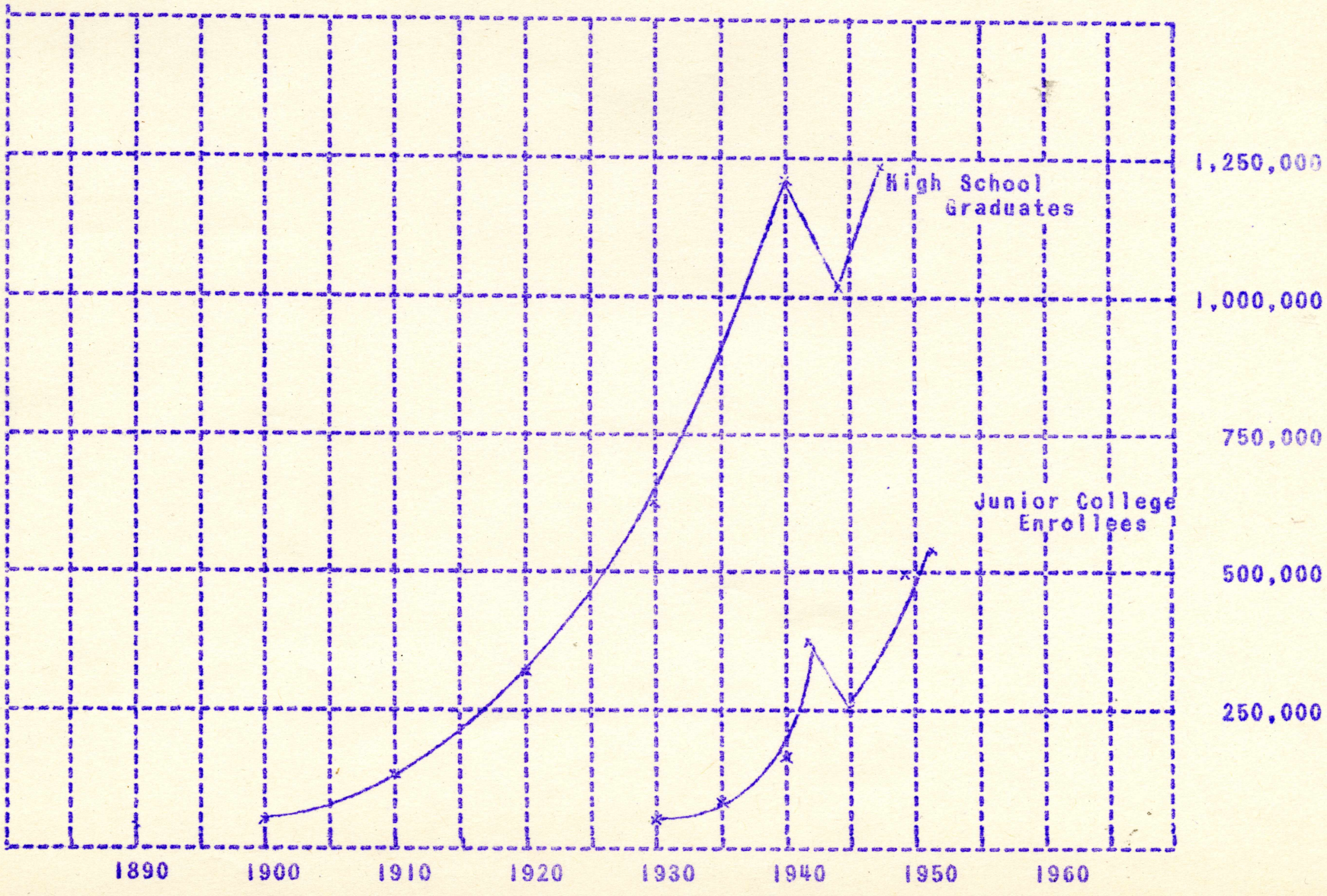
Growth of Junior Colleges

Chart D of the appendix shows that the growth of junior colleges from 1922 to 1950. The greatest growth has been in the area of local public junior colleges. The number has increased from 46 in 1922 to 260 in 1950, while private junior colleges increased from 137 in 1922 to 300 in 1950. The total number from 1922 of 207 has increased to 620 in 1950. The latest ficures from the junior college journal indicates that there are now 634 junior colleges in the United States.

Let us now refer to Chart 3 which shows the growth in the number of high school graduates and the number of junior college enrollees starting with 1890 and continuing up to the present time. Beginning in 1890 we had very few high schools and no junior colleges. The high schools grew only reasonably rapidly from 1890 to about 1910. From 1910 to the present time the number of high schools and the enrollment in the high schools has grown very rapidly. The total number of students enrolled in 1910 is approximately 150,000 and the total number of students enrolled in 1948 in four-year senior high schools is 3,694,124. Junior college development started in 1920 with about 10,000 students enrolled and it has grown rather rapidly, in fact its growth almost parallels the growth of the number of high school

Chart 3

Growth in number of high school graduates and number of junior college enrollees
1890 - 1952



graduates; until 1951, 562,000 students were enrolled in the junior colleges throughout the United States.

C. Guiding Principles for Organizing a Junior College[5] (1947)

The American Association of Junior Colleges at their national convention in St. Louis in 1947 adopted the following general principles to be used as a guide for the establishment of the community colleges or enabling legislation which will favor their development.

1. There must be clearly recognized by the state the potentialities of junior college education.

   a. A junior college should offer college preparatory work parallel to the college or university courses and in addition terminal courses should be developed in response to the needs of the community.

   b. An adult education program also in response to the needs of the community should be developed by the junior college.

2. A survey of the state in reference to the needs for junior colleges is recommended as a necessary prelegislative step. Probably this recommendation was made not so much from the standpoint of establishing regional junior colleges as from the standpoint of the state's responsibility in helping local communities establish suitable junior colleges.

3. School population is a necessary consideration. It is suggested in most cases that a secondary school enrollment of 1,000 be considered a minimum. A junior college with

an enrollment of 200 or less cannot be operated economically or effectively as a separate unit. It should be integrated with the eleventh and twelfth grades.

4. It must be ascertained whether there is enough taxable assessed valuation within a district to support a junior college. There should be sufficient assessed valuation to provide the capital outlay which would include buildings and equipment and a sufficient amount of valuation per average daily attendance in combination of local and state sources to carry an adequate program. There should be available from local and state sources a minimum of at least $200 (more recent data to be presented later shows that operating expense is nearer $325 for 1950-51) per student per year for operating expenses. Material to be presented later in this same report would indicate that the present operating expense per student in junior colleges is near $325 per student per year.

5. Petition for junior college should come from the voting citizens of the district in which the junior college is to be organized.

6. It is a strong recommendation that the public junior college be tuition-free.

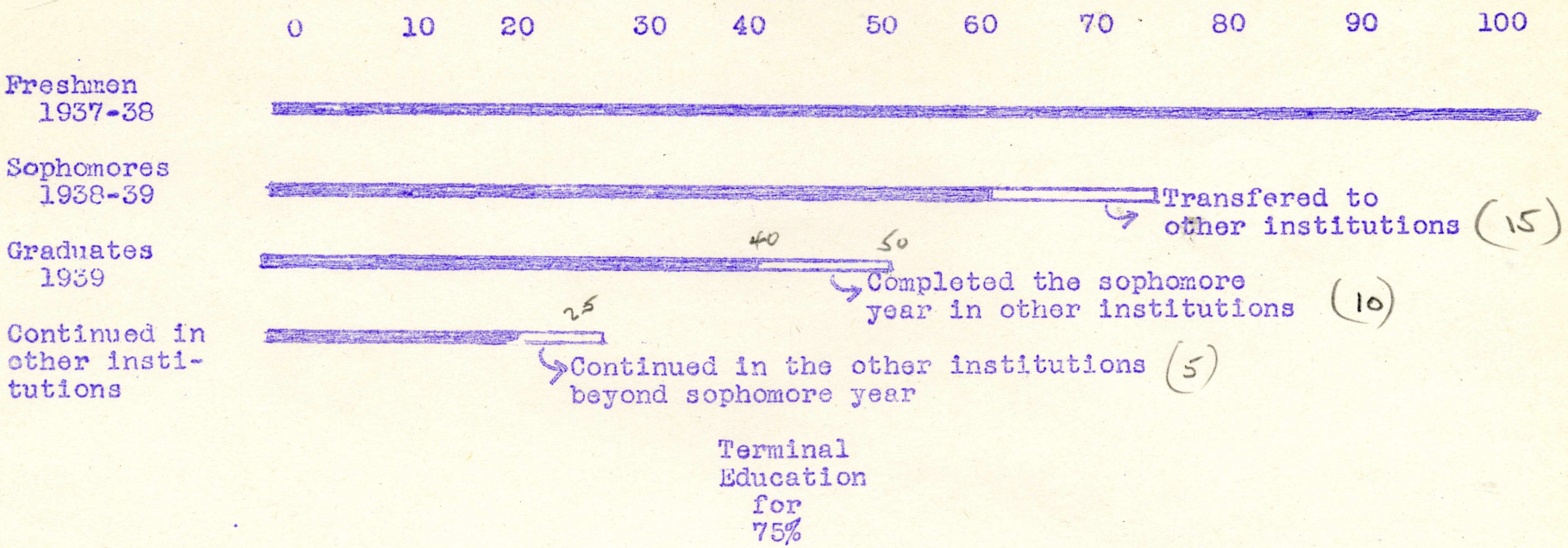
D. Present Program of College Education

It is well known that many students[11] enter college and for various reasons complete only one or two years of the four year college education program. The reasons for completing only this much are varied but some of them are financial, others they find

that the four college program is not particularly suited to their needs since the thing they are most seriously in need of is developing some occupational skills which they can use as a means of making a livelihood. To determine how many junior college students complete the junior college training, how many transfer to a senior college and then of the number who transfer, how many finally graduate from a senior college Chart No. 4 was prepared. This chart shows the survival of 57,826 junior college students in 392 junior colleges. The chart is made out on the basis of 100 freshmen entering one of these typical junior colleges in September, 1937. By September of 1938, 60 of these 100 freshmen were still in their respective junior colleges and fifteen of them had transferred to other institutions. By June of 1939, 40 of the original 100 graduated from their respective junior colleges and ten of the fifteen that had already transferred to some other institution had also completed their sophomore year in the other institution. Of those who graduated from their two-year junior college in 1939, 20 of the 40 or half of them continued in education institutions of higher learning. Five of the ten that had completed their sophomore year in some other institution than their first junior college also continued on in other institutions beyond their sophomore year. This means now that a total of 25 of the original 100 students who began as freshmen in junior colleges in 1937 are still in college in some four-year institution. For the other 75 students this education was terminal. If 75% of the junior college students are in need of a terminal

Chart 4

SURVIVAL OF 57,826 JUNIOR COLLEGE STUDENTS IN 392 JUNIOR COLLEGES.



This chart summarizes the education history of 100 typical junior college freshmen. Of the 100, 60 completed the freshmen year and returned to the same junior college as sophomores while 15 transfered to other institutions. Of the 75 sophomores, 50 completed there sophomore year (40 in their original junior college and 10 in other institutions). Of the graduates (20 from their original junior college and 5 from other institutions) continued their education after their sophomore year.

One important conclusion is that junior college education was terminal education for 50 out of each 100 entering freshmen. The students were terminal. The next question is was their education designed to fit their needs and therefore terminal or semiprofessional. In some community colleges such as those in California the program is planned as a terminal occupational training program for as many as 75% of the students. In many other junior colleges including many in Michigan the student takes a portion of the college preparatory that is offered and then adapts it to his own terminal needs as best he can.

educational program, those communities who are operating junior colleges should then organize their program to meet the needs of these 75 students out of each 100 that enter their junior colleges so that in the completion of one year or two years in the junior college program they will have developed marketable skills in their respective areas of work. In many junior colleges and colleges as well the student enters the college in hopes that by taking a portion of the program offered there, he can adapt it to his own terminal needs and somehow develop marketable skills. In all probabilities if the program could be tailored to suit his needs he would complete the program in one year or two years and he would finally become economically self-sufficient.

E. Educational Continuance[2]

Continuing with the thought that tuition may have some effect upon the attendance as well as the location, let's turn to Chart No. 5 which shows the percent of the students of the 1941 graduating classes that continued in college depending upon the college facilities available locally and tuition charges. First is represented communities without junior colleges and there were twelve such communities studied. Then communities with junior colleges and there were 45 of these studied. Then these 45 communities with junior colleges are broken down into 15 which charged tuition and 30 that do not charge tuition. Column No. 2 shows the percent of all the graduates from the local high schools of these communities that attended college.

In those communities that do not have junior colleges, 19.7% of all students continued on in college. The third column shows the percent of the graduates of these communities that continue on if they happen to fall in the higher social economic group - in other words the parents have the necessary funds to send them on to college. Here we find 38.7% continuing on. In the fourth column is shown the percentage of the graduates of these local high schools that continue on in college if their parents happen to fall in the lower social economic groups. here the parents would not have funds to send the student to school. They might furnish some of the funds but they could not furnish all of them. Here we find only 10.8% of the total graduates continuing on to college. Now let's have a look at the 45 communities that have junior colleges and we find 48.4% of all high school graduates continue on into college. If we go to the next column we find that 60.7% of those of the higher social economic group continue and if we go to the last column 39.1% of those in the lower social economic group continue. This is almost four times the number that will continue if no junior college is available in that community. Horizontal line 3 shows what happens if tuition is charged in the local junior college. If tuition is charged and there are fifteen such communities represented here, we find that the total percent of the high school graduating class continuing on to college drops now to 31.8% of which 48.9% is made up of the higher social economic group, 19.7% of the lower. And then the fourth line down is represented communities with tuition-free

Chart 5

EDUCATIONAL CONTINUANCE

PERCENT OF STUDENTS OF 1941 GRADUATING CLASSES THAT CONTINUED IN COLLEGE DEPENDING UPON COLLEGE FACILITIES AVAILABLE LOCALLY AND TUITION CHARGES

TYPE OF ORGANIZATION	ALL GRADUATES	GRADUATES IN HIGHER SOCIO-ECONOMIC GROUPS	GRADUATES IN LOWER SOCIO-ECONOMIC GROUPS
WITHOUT JUNIOR COLLEGES (12)*	19.7	38.7	10.8
WITH JUNIOR COLLEGES(45)	48.4	60.7	39.1
WITH TUITION-CHARGING JUNIOR COLLEGES (15)	31.8	48.9	19.7
WITH TUITION-FREE JUNIOR COLLEGES (30)	53.5	67.5	46.7

*Number of systems represented.

Some times a state system of regional junior colleges has been proposed. The inquiry found the proportion of graduates of high schools in the communities of location of the state junior colleges to be about the same as the proportions from local high schools entering local public junior colleges, but that for high schools at any distance, even only seven to fifteen miles, from the state unit, the proportion drops off so sharply as to discredit proposals for systems of state, or regional, junior colleges made on the assumption that they will serve to democratize this educational level outside their communities of location.

<10 @ BC Jr C.
10-100 @ MTPI.

junior colleges and there are 30 in this study. Now we find that 53.5% of all graduating seniors in these communities continue on in junior college with 76.5% of those in the higher social economic group continuing and 46.7% of those in the lower social economic group continuing. This shows quite definitely that a tuition-free local junior college would favor very much persons in the lower social economic group because the percentage goes from about 10% to about 46%. It also shows that a tuition free community college even favors those in the higher social economic group because the percentages go from 38.7% to as much as 67.5%. Sometimes a state system of regional junior colleges has been proposed. The inquiry found the portion of graduates of high school in communities of location of the state junior colleges to be about the same as the portion from local high schools entering local public junior colleges but for high schools of any distance even only seven to fifteen miles from a state unit the proportion drops off so sharply as to discredit proposals for system of state or regional junior colleges made on the assumption that they will serve to democratize this educational level outside of their communities of location. Midland has already found this true with respect to Bay City Junior College. The distance to Bay City Junior College and the difficulty of transportation since we do not have hourly bus service between the two communities limits the number of students from Midland to attend Bay City to that of about 10 or 15 at the very most.

To participate in the other portions of the community college program other than the actual classroom work either necessitates a student living in the community where the junior college is located or else they must transport themselves back and forth in evenings or extended hours beyond the usual class hours. If they rent living facilities in the community where the junior college is located, then they have all of the board and room or lodging obligations that you have in a regular four-year institution. If they travel back and forth as many as fifteen miles and provide their own transportation, the expense rises rapidly. A very discouraging factor in students traveling that distance is not only the expense involved but the time of the day that is consumed as well.

F. Organization of Junior Colleges

Junior colleges are organized roughly in three different groups. First of all is the separate two-year junior college which is the largest number. These colleges have separate buildings, separate administrative staffs, they are a part of the local public schools but they are an entirely separate unit and are in no way related to the high school. Some favor this type of organization largely because they believe it somehow establishes a traditionally college atmosphere and that they can more easily make the necessary adjustment with their students from high school to college work. The second type of institution is the so called association type of institution. This junior college is housed in the same building with the high school but under a separate administrative head. The

advantages of this type of organization over the separate two-year type is that the same laboratories and shops can now be used by the junior college that are used by the high school. It makes a much more efficient use of those areas of the school plant which are the most expensive to build and operate. Probably its biggest drawback is the fact that there are two separate school units using some of the same space and unless the administrative program is very carefully organized there's bound to be conflict on the use of this space.

The third type of organization is the four-year junior college. The regular four-year institution is all housed in one building or one set of buildings and is all administered by one administrative staff. It includes grades 11, 12, 13 and 14. This has all the advantages of the association and none of the disadvantages of the two-year.

As we continue to present our findings we will refer many times to the four-year, the association and the two-year junior college.

III. Comparison of Junior College Organizations[2]

What type of an assignment does a teacher receive in a typical four-year Jr. College? Are some teachers assigned only to grades 11 and 12 while others are assigned only to Grades 13 and 14?

In order to determine the advantages and disadvantages of the three types of junior college organizations Professor Koos studied a total of 167 junior colleges ranging in enrollments from 100 to 500 or more and representing the three types of organizations; two-year separate, association and four-year.

A. Vertical spread of Teacher Assignments.

One of the claims made for a four-year institution is that the teachers in the four-year institution teach both at the high school level, grades eleven and twelve, and at the junior college level, grades thirteen and fourteen. First, we will examine the spread of teacher assignment. This is shown in Chart 6, the left-hand column shows the type of junior college organization. First, a separate two-year - thirteen of these were studied, for the association type - twenty-five were studied, and for the four-year - ten were studied. Next column shows the number of teachers that were teaching junior college subjects only and the percent they were of the total of teachers. The next column shows the number of teachers in each type of institution that were teaching both junior college and high school subjects; in other words they are teaching in grades eleven, twelve, thirteen and fourteen.

The academic and special teachers are here divided. The academic teachers teach almost exclusively in junior college classes. For them to do otherwise means they would have to move one portion of the day to high school and continue their teaching there. This means that buildings are not self-contained so this system would not function efficiently. Now let's look at the association junior colleges of which there are 25. One hundred fifty-eight of their teachers teach only junior college classes;

Chart 6

THE VERTICAL SPREAD OF TEACHER ASSIGNMENTS:

To show vertical spread of assignments, teachers were classified as only junior college teachers or as teachers of both junior college and high school students. Here again the material is presented by type of organization such as separate two-year, association and four-year.

Type of organization and subject group	Junior College Teachers only		Junior College and High School Teachers	
	Number	%	Number	%
Separate Two Year (13)				
Academic	234	96.3	9	3.7
Special	98	87.5	14	12.5
Association (25)				
Academic	158	41.8	220	58.2
Special	38	19.9	153	80.1
Four Year (10)				
Academic	86	27.6	226	72.4
Special	44	21.8	158	78.2

Since this study involves 2500 teachers in 48 institutions, we can see that the average size faculty represents 50 or more teachers. With this size faculty it would appear that whether a teacher has an assignment at one or both levels of teaching is a matter of administrative planning and not an economic necessity.

220 of their teachers teach both junior college and high school classes. In the special teacher field, 38 teach only junior college and 153 teach both junior college and high school classes. This means that the vertical spread of teacher assignment is much better in the association than the separate two year type of junior college. Vertical spread of teacher assignments facilitates vertical coordination in subject matter areas.

In the four-year institution shown at the bottom part of Chart 6 only 86 of the academic teachers now teach junior classes only and 226 of them teach both junior college and high school classes. This means that roughly 3/4 of them now are teaching at both levels. For special teachers 44 in junior college classes only and 158 in junior college and high school or a percent of 78.2 are teaching in both.

This shows that the four-year institution lends itself very well to vertical teacher assignment and vertical coordination of subject matter. Its almost the exact opposite of the separate two-year institution in this respect.

B. Facilities and Their Use

Which type of Junior College generally has the greatest number of facilities? One of the claims that is made for an association or a four-year type of junior college is that much better facilities are available and that better use is made of available facilities. Chart No. 7 shows the findings of the 168 junior colleges studied in respect to facilities. Under the term "general facilities" are placed the offices, cafeterias, lunch room, auditorium and stage when not combined with the gymnasium.

Special classrooms are art, music, bookkeeping, typing, home-making, public speaking, English, mathematics, foreign language, band and chorus. Laboratories and shops include general laboratories in chemistry, organic qualitative, laboratories for biology, botany, physics, radio; lecture rooms for chemistry, physics; shops for printing, woodworking, metal working, welding and machine work. Provisions for physical education includes men's gymnasium, women's gymnasium, showers, lockers, rooms for each, football fields, baseball fields, track and swimming. First, the 168 schools were divided by enrollment. Those with less than 200 students enrolled, those with 200 to 500, those with 500 or over. Referring to Chart 7 in the first column the facilities are described as general facilities, special classrooms, laboratories, shops, physical education and athletics. Moving to the right one column we find the average number of these that would be found in a separate two-year institution if the enrollment there was less than 200 and we see that you could expect nine facilities of the general nature, six special classrooms, 7.3 laboratories, and 8.3 rooms devoted to physical education and athletics. In the association junior college with an enrollment less than 200 we find that we would have 11.8 general room facilities, 8.4 special room facilities, 8.5 laboratories and shops for each of these junior colleges, and 11.8 physical education and athletics rooms. Farther to the right in the next column we find that the average four-year junior college would have 13.7 general rooms, 10.3 special classrooms, 9.7 laboratories and shops per four-year junior college with this enrollment and 13.3 rooms devoted to physical education and athletics.

Chart 7

FACILITIES

Under the heading "general" were placed the offices, cafeterias or lunchrooms, auditorium and stage when not combined with the gymnasium. Special classrooms included art, music, bookkeeping, typing, homemaking, public speaking, English, mathematics, foreign language, band, chorus, etc.

Laboratories and shops include general laboratories for chemistry, organic and qualitative and quantative; laboratories for biology, botany, physics, radio; lecture rooms for chemistry, physics; shops for printing, drawing, woodworking, metal working, welding and machine work. Provisions for physical education include men's gymnasium, women's gymnasium, showers and locker rooms for each, football fields, baseball fields, tracks and swimming pools.

Average number of general and specialized facilities in use in junior colleges of different enrollments and types.

Group and Facilities	Less than 200			200 - 499			500 and over		
	Separate Two-Year	Assoc- iation	Four Year	Separate Two-Year	Assoc- iation	Four Year	Separate Two-Year	Assoc- iation	Four Year
General	9.0	11.8	13.7	12.5	13.0	12.8	16.0	18.0	20.0
Special Classrooms	6.0	8.4	10.3	7.8	10.0	10.8	11.4	14.0	15.3
Laboratories and shops	7.3	8.5	9.7	9.0	11.7	10.5	13.6	16.0	19.3
Physical Education and Athletics	8.3	11.8	13.3	11.3	14.4	13.8	17.2	16.7	19.3
All Facilities	30.7	40.3	47.0	40.5	49.1	48.8	52.2	64.7	74.0

In the next enrollment group 200 to 500 and we see that in practically every case here the association and the four-year institution has more of these facilities than does the separate two-year institution. Still farther to the right the enrollment is 500 or over. Again we see that the association and the four-year organization with one exception, that of physical education plant, have more facilities than does a separate two-year institution of the same enrollment. One of the reasons why this is true is because a separate two-year institution has difficulty justifying the use of some of these special rooms if they can use them only for the two-year program of junior college education but the association with the four-year can justify them on the basis of the fact that they are used for a four year educational program. One other fact that will be brought out in the study of the cost of operation of such institutions is that the association and the four year can keep down the cost of operation of their institution much more easily than can the separate two-year.

Use of Available Educational Facilities by the Three Types of Organizations in Junior Colleges

How much use is made of the available facilities by both the high school and the junior college in the two year, association and four year junior college?

Let us turn to Chart No. 8 which shows the percent of the use of facilities by the junior college only and the percent of combined use of facilities available by the junior college and the high school.

CHART 8

PERCENTAGES OF GENERAL AND SPECIALIZED FACILITIES USED BY JUNIOR COLLEGES OF DIFFERENT ENROLLMENTS AND TYPES WHICH WERE IN USE FOR JUNIOR COLLEGE CLASSES ONLY AND CLASSES IN BOTH JUNIOR COLLEGE AND HIGH SCHOOL.

		Enrollment Less than 200		
Facilities	Use	Two Year	Association	Four Year
General	Jr. College only	100.00	31.4	7.9
	Combined Use	0.0	68.6	92.1
Special Rooms	Jr. College only	100.0	28.5	2.3
	Combined Use	0.0	71.5	97.7
Laboratories and shop	Jr. College only	88.9	19.8	15.2
	Combined Use	11.1	80.9	84.8
Physical Education and Athletics	Jr. College only	46.7	5.9	1.8
	Combined Use	53.3	94.1	98.2
All Facilities	Jr. College only	82.7	20.4	6.7
	Combined Use	17.3	79.6	93.3

Dr. Koos' again made the study with enrollments less than 200, 200 to 500 and 500 or over and we have taken out only that portion with enrollments of less than 200. First of all on the left hand we have the same groups of rooms as we had before. The first column shows the type of facility. In the second column, the use is described as "college only" or "combined". The remaining columns show the percent of use made of these facilities by the two year, the association and the four year junior college. We find the two-year separate institution would use their general room 100% themselves. There would be no use of these rooms by the high school. Likewise we find that in the association about 31% of their rooms would be used exclusively by themselves but 68% of their rooms would be used by themselves and the high school housed in the same building. We move on over to the four-year organization, we find that only about 7.9% of the facilities of the general nature are used exclusively by the college and 92.1% are in combined use with the high school. If we move down one group and examine special rooms we find very much the same is true. The separate two-year colleges uses those exclusively for themselves, the four-year institution uses almost 100% of its rooms for both the junior college and high school and in the association a combined use is worked out in which 71.5% of their rooms are used in a combination with the high school students. The same is true of laboratories and shops. Let's move on down to physical education and athletics. Since only one football field is usually provided and one basketball floor of any size, here the combined use must be worked out by the two-year institution as well as by the association and the four-year. Here we find that 46.7% of the

facilities is used only by the junior college and 53.3% is combined use for the two-year junior college. This chart does show this: that the two-year separate institution, because they are a two-year separate institution, they try to develop an identity of their own which is separate and apart from the high school and they do it not only in the use of their faculty but they do it in the use of their facilities as well.

C. Guidance Relationships in Junior Colleges

Let's turn to the appendix and examine Charts G, H, I, J, K and L. These charts show the working relationships that exist between the faculties of the junior college and of the high school in the same local community.

D. Courses Taken out of Level

Courses taken out of level may be described as either twelfth grade students taking thirteenth and fourteenth grade subjects or thirteenth grade students taking high school level subjects. See appendix Charts H and I.

E. Evidence of Vertical Integration

For further evidence of vertical integration let's refer to Chart J of the appendix.

F. Good Sequence of Subjects

Good sequence of subjects is shown in Chart K of the appendix.

G. Faculty, Departmental, and Curriculum Planning

One other way to examine the vertical coordination is to examine the faculty, departmental, and curriculum planning in the separate two-year junior college, the four-year junior college and the association. This is shown in Chart L of the appendix.

IV. Summary of Advantages of K6-4-4 Plan

Probably the best summary of advantages of the K6-4-4 plan of organization is given by Jessie Bogue in the book "The Community College" which in turn is a summarization of the principles set forth by Sexon and Harbison In The New American College.[5,6]

1. The freshman and sophomore college years are a logical part of secondary school system rather than of the standard college or university.
2. Being secondary in character these years should be closely articulated with the rest of the secondary system.
3. The most efficient and economical articulation is the union of these years with the eleventh and twelfth grades as a single four-year institution.
4. The junior college is the top most unit of a public school system and must be neither traditionally college nor high school but must develop a character and an individuality of its own with methods and policies adapted to the ages with which it works.
5. The four-year junior college is an institution of sufficient size and span to be a complete unit in itself. It is not a fractional part of the standard college transplanted from its native habitat to the local community.
6. A twelfth grade is not a logical stopping place inasmuch as it falls two years short of the completion of the secondary school span.

7. The assumption of full responsibility of general and secondary education by the local community will give the university full and untrampled freedom to concentrate on its proper sphere of specialization, research and professional training.

Of these seven points in the summary No. 3 probably needs expansion.

3. The most efficient and economical articulation is the union of these years with the eleventh and twelfth grades as a single four-year institution for the following reasons:

a. Practically all students in the eleventh grade and above are in the upper adolescent period thus giving social and psycological homogeneity to the student body.

b. With the proper orientation and adjustment program in the eleventh grade the upper classes including the twelfth grade can be held to a standard of accomplishment in no way inferior to that maintained in the traditional freshman and sophomore college years.

c. The junior college organized as K6-4-4 plan requires one less school plant for the community than when is organized as a 6-3-3-2 unit and the junior college is an isolated unit.

d. The junior college organized as a K6-4-4 unit results in a more integrated educational program and a more unified and efficient administration machinery than when it is organized as a separate two-year unit and housed in the same plant with a separately organized high school.

e. Curricula worked out over a continuous four-year period more readily facilitates the elimination of duplication or overlapping of subject matter than when these curricula are organized as two separate and distinct units.

f. Terminal curricula in particular when begun in the twelfth grade result in an earlier and a more definite arrangement of subject matter to meet the objectives sought as well as a wider selection of liberal offerings than can be possible when but two years are provided for the organization of these curricula.

g. A diploma granted at the conclusion of the four-year course carried greater weight and dignity than when granted at the conclusion of a two-year period.

h. School traditions and school spirit are more easily developed and maintained in a four-year institution than in a two-year one in which the school opens each year with a majority of the students who are new students.

i. A continuous program can be more easily organized and administered over a four-year period than over a two-year one.

j. The four-year junior college gives even a small community a student body of adequate size for efficient student classification.

V. Enrollments in the Intermediate Schools and the High School

To determine what enrollments might be expected in grades seven, eight, nine, ten, eleven and twelve regardless of what combination of these grades is finally decided upon the enrollments in grades one through eight as of September 1951 have

been compiled for all districts who send non-resident ninth grade students to Midland City Schools, as well as the enrollments in grades one through eight for the Midland City Schools. These enrollments by schools are shown in Chart E in the appendix. Let us now turn to Chart No. 9 which shows the enrollments in grades seven, eight, nine, ten, eleven, and twelve beginning the years 1947 through 1960. Not only does this show the enrollments by grades but also shows combinations of enrollments such as enrollments of grades seven, eight and nine, enrollments of grades seven, eight, nine and ten, enrollments in grades ten, eleven and twelve and enrollments in grades eleven and twelve. To determine what our enrollment might be for the incoming ninth grade of any year we have found that we can take the total non-resident eighth grade enrollment, from those districts which send us non-resident students as ninth graders, plus our own resident eighth grade enrollment, add those together and find the total. We have found over a period of years that the expected drop out between the total eighth grade enrollment of one year and the actual enrollment in the ninth grade of the succeeding year is approximately 11%. Likewise, we found that about 8.8% of the persons who enroll as ninth graders at the beginning of one school year will not enroll as tenth graders at the beginning of the next school year. Between the tenth and the eleventh grade we found the dropout rate is about 6.3% and between the eleventh and twelfth grade the dropout rate is about 15.1%. These dropout rates were determined by calculations on actual enrollments in the years from about 1940 to 1950. They did include the war years when a larger number of boys were dropping out between grades eleven and twelve

Chart No. 9

ESTIMATED INTERMEDIATE AND HIGH SCHOOL ENROLLMENT BASED ON PRESENT ENROLLMENT AND PAST DROP-OUT EXPERIENCE

	7	8 Grade											
	Res.	Res.	Non. Res.	Par.	Total	9	10	11	12	7-9	7-8-9-10	10-12	11-12
1947	228	192	228	44	464	379	330	314	265	799	1109	909	579
1948	199	250	272	56	578	413	346	309	267	862	1208	922	576
1949	226	200	314	54	568	513	377	324	258	939	1316	959	582
1950	223	227	339	40	606	503	468	353	276	953	1421	1097	629
1951	231	224	424	33	644	540	459	438	300	995	1454	1197	738
1952	247	247	406	44	697	574	492	430	372	1068	1558	1294	802
1953	258	247	406	57	721	621	523	461	365	1126	1649	1350	826
1954	258	258	452	63	773	642	566	490	392	1158	1724	1448	882
1955	318	258	468	77	803	688	586	530	418	1264	1832	1534	948
1956	311	318	476	66	860	715	628	549	450	1344	1972	1627	999
1957	340	311	449	59	819	766	652	588	466	1417	2069	1706	1054
1958	340	340	456	62	858	729	699	611	499	1409	2108	1809	1110
1959		340				764	665	655	518			1838	1173
1960							698	623	556			1877	1179
1961								654	528				1182

Estimates from growth curves Studies of the past 10 year enrollment data show the following drop out rates:

8 to 9th - 11.0%
9 to 10th - 8.8%
10 to 11th - 6.3%
11 to 12th - 15.1%

and probably this accounts for the larger percentage dropping out between these two years. Our figures since the war tends to show that if we are to extend this over another ten year period that this 15% dropout between the last two years would become less. Once the enrollment in grades seven, eight, nine, ten, eleven and twelve has been determined then the combinations which are shown on the right hand side of Chart No. 9 are simply found by additions of numbers.

A. Grades Seven, Eight and Nine

Now let us turn to Chart No. 10 or Graph No. 10 in which we have taken the enrollment information of the preceeding chart and proceeded to graph this information for two combinations of grades. First, grades seven, eight, and nine and second, grades ten, eleven and twelve.

We look at the lower curve representing grades seven, eight, and nine and we see that beginning with September of last year that there is slightly over 1000 students enrolled in these grades. As we progress to the right through the years '52, '53, '54, '55 and on we see that with the exceptions of year '54 there is a gradual rise in the enrollment each succeeding year. Our actual data does not extend beyond 1958 but we have extended it as a dotted line indicating what might be expected in enrollments up to the year 1964 assuming that we would have the same rate of increase each succeeding year. This is not accurate perhaps but it probably can serve for planning purposes. We could reasonably expect, perhaps, that the

enrollments in these grades would not be less than that shown in the chart. In the year of 1964 we would reach a total enrollment in grades seven, eight, and nine of 1600 students. It is important to note here that no non-resident students in grades seven and eight are included in these enrollments, in other words its the seventh and eighth grade resident students of the city of Midland, the ninth grade resident students of the city of Midland and the ninth grade non-resident students from those districts which are sending ninth graders to Midland and have been sending them for a long time.

B. Grades Ten, Eleven and Twelve

If we look at the top graph of Chart No. 10 we see that there is a gradual increase each year in the number of students enrolled beginning with 1200 in 1951 and extending to approximately 1275 in 1960. Our data does not extend beyond the year of 1960 but based upon the previous rate of growth the curve again has been extended as a dotted line and it would indicate a possible enrollment in grades ten, eleven and twelve by 1964 of 2050. Here again extending the curve is not necessarily accurate but from our past rate of growth it is reasonable to expect that the actual enrollment will not be less than the figures indicated in the growth curve.

C. Grades Seven, Eight, Nine and Ten

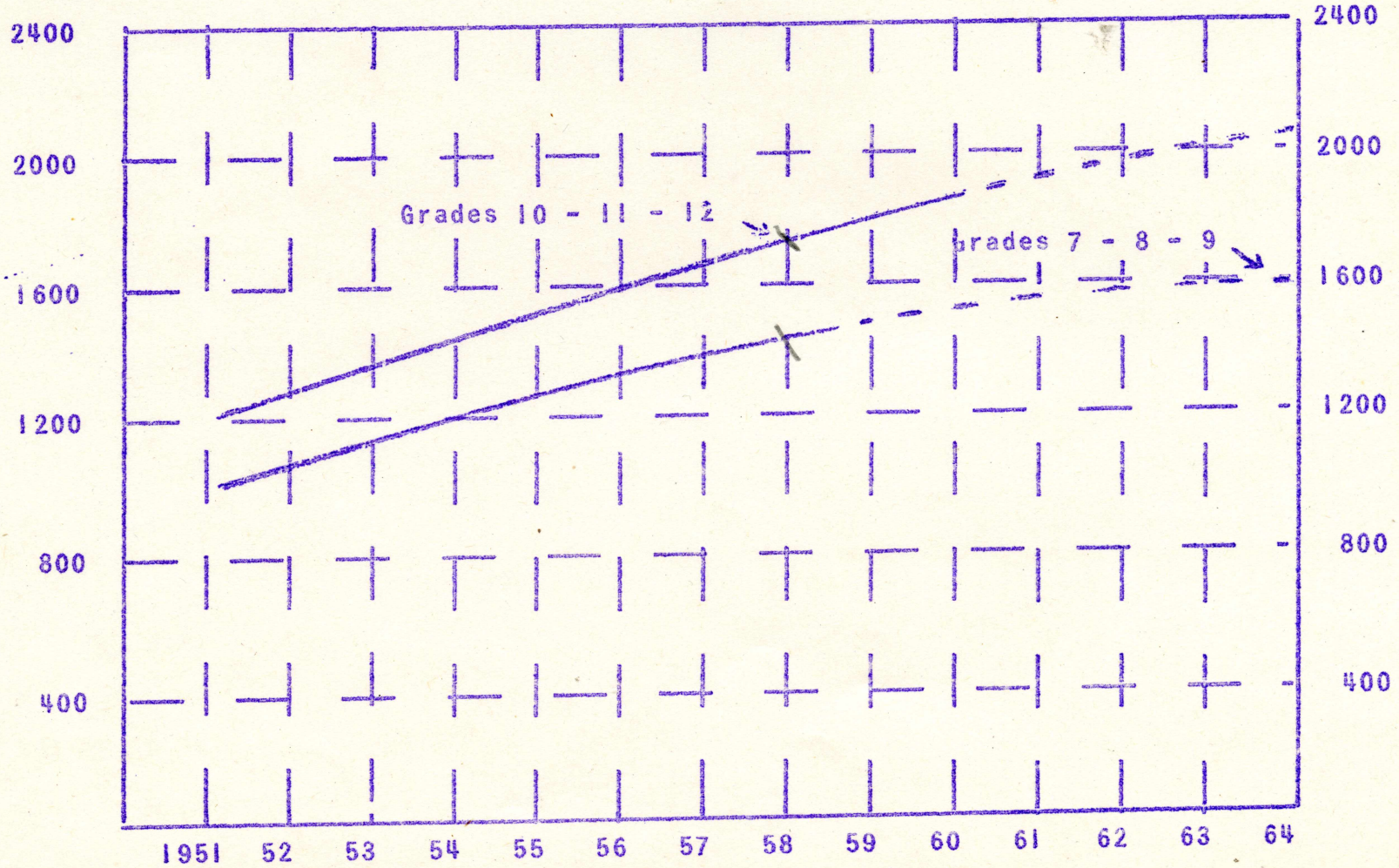
Now let us turn to Chart No. 11. In Chart No. 11 the enrollment information from Chart No. 9 has been rearranged now with a different grade grouping. Grades seven, eight, nine and ten are grouped together and grades eleven and twelve are in the other grouping.

p

Chart No. 10

Estimated Intermediate and High School Enrollment Based on Present Enrollment and Past Drop-out Experience

(Resident students Grades 7-8-9-10-11-12)
(Non-resident students Grades 9-10-11-12 from present sending districts, see Chart E of appendix.)



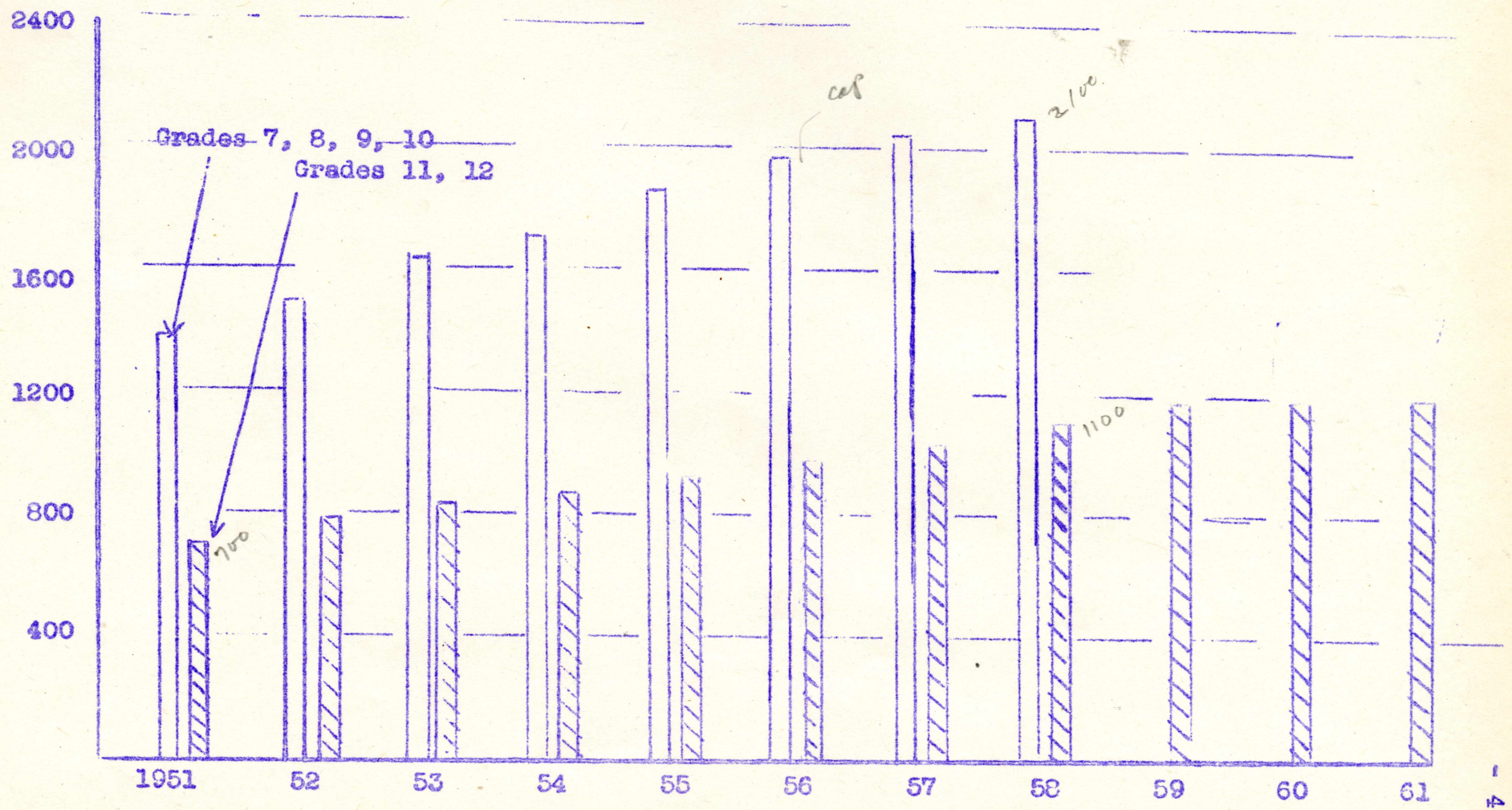
Beginning in 1951 the total enrollments in grades seven, eight, nine and ten is approximately 1400. The rate of growth in this combination of grades is quite rapid until the year 1956. Then for the years 1956, 57, and 58 growth continues but at a slower rate than for the previous 1951-55 span. In these four grades we would reach an enrollment of approximately 2150 students in 1958. It is reasonable to expect by 1961 this combination of grades would reach a total enrollment between 2300 and 2400 students. The students included now in this combination of grades are the resident seventh, eighth, ninth, and tenth graders from the Midland City Schools, the ninth and tenth graders from all non-resident districts that normally send students to Midland. With an enrollment of between 200 and 2400 students sometime in the period between 1958 and 1961 some additions would have to be made to Northeast Intermediate School to take care of this total enrollment, assuming that the present high school is made Central Intermediate School with a possible enrollment of 1200 and Northeast has a possible enrollment of 750. This would make a combined capacity for the two schools of 1950 at present. If we look at the chart carefully we can see that even in 1956 that these two schools would be at their capacity and so the plans would have to be made at least by that time or before to enlarge Northeast to a capacity somewhat similar to that of the present high school. If that were done those schools could then house all of these intermediate students in this combination of grades up through the years 1961 possibly beyond.

CHART NO. 11

Estimated Intermediate And High School

Enrollment Based On Present Enrollment

And Past Drop-out Experience



D. Grades Eleven and Twelve

Now let us turn to the part of the chart which represents grades eleven and twelve. We find that in grades eleven and twelve we start with an enrollment of about 700 in 1951 and the enrollment rises quite rapidly through 1958 and then somewhat slower through the years '59, '60 and '61. In 1961 we finally reach an enrollment of 1200 students in these two grades. If we were to separate these grades as is shown in this chart then, of course, the community college would include grades eleven and twelve. The estimates of the total enrollment in the community college will be found later in this paper.

VI. Michigan Junior Colleges

Chart No. 12 is information which was collected by Dr. Erick Bradner, Dean of Bay City Junior College, and it is for Michigan Junior Colleges for the 1950-51 school year. In the left hand column we have the total enrollments, non-resident and resident enrollment, the number of full time teachers, tuition for resident and non-resident students and we have the per capita cost for the previous years operation 1949-50. This is broken down into instructional costs, non-instructional costs and per capita cost and finally the teacher-student ratio.

A. Enrollment

As far as enrollment is concerned if we look at the resident and non-resident enrollments of these public junior colleges in Michigan, we see that the resident enrollment generally exceeds the non-resident. The enrollment varies from less than 200 at Benton Harbor to over 1300 at Highland Park.

Chart 13 shows the enrollments by grades as grades thirteen and fourteen and how many of these students are college preparatory and how many are terminal for the 1947-48 school year. In the next column the total enrollment also shows how many of the students are men and how many are women and how many are specials. Special is designated by the word "S". A special student is one who is taking less than twelve college hours.

B. Tuition

As far as tuition is concerned generally the tuition varys from about $180 to $200 per year for resident students to as much as $200 to $250 per year for non-resident students. The only school in Michigan which does not charge tuition to resident students is Highland Park. The chart shows Highland Park has a tuition charge of $10. Actually this is a student activity fee and not a tuition. All the other school represented on the chart so far as is known have an activity fee over and above the amount shown for tuition. Some time later in this report the influence of tuition upon enrollment will be discussed.

C. Per Capita Cost of Operation

The per capita cost of instruction varies from a minimum of $191 per student per year at Flint to a maximum of $478 at Gogebic. Non-instructional costs vary from a minimum of $35 at Port Huron to a maximum of $251 at Gogebic. Non-instructional costs includes such items as fuel, light, power, janitorial service, maintenance, repair of buildings, upkeep of equipment, purchase of new equipment. Those schools such as Bay City and Highland Park (Highland Park figures are not shown here) are of the association type that have their junior college housed in

Chart No. 12

1950 INFORMATION CONCERNING THE PUBLICLY CONTROLLED JUNIOR COLLEGES IN MICHIGAN

	Bay City	Benton Harbor	Dearborn	Flint	Gogebic	Grand Rapids	Highland Park	Jackson	Muske-gon	Port Huron
1. Enrollment: A-Total enrollment	482	185	781	836	126	865	1307	459	386	317
B-Resident enrollment	210		596	644	110	614	264	365	245	195
C-Non-Resident enrollment	272		185	192	16	251	1043	94	141	122
2. Teachers-Full time equated	26.6	13.5	35	36	11.75	47	65	28 3/4	19	17.5
3. Tuition: A-Resident per year	$100.00	$150.00	$100.00	$150.00		$120.00	10.00	$80.00	$150.00	$100.00
B-Non-Resident per year	$150.00	$250.00	$180.00	$190.00		$170.00	$210.00 Sem.	$160.00	$175.00	$140.00
4. Per Capita Costs 1949-50 A-Instructional	$307.61	$299.28	$287.86	$191.15	$478.14	$266.35			$184.70	$258.47
B-Non-Instructional Costs - - -	48.01	$ 79.41	$ 76.28	$134.23	$251.43	$112.67			$ 68.25	$ 35.02
C-Per Capita total Costs, 1949-50	$355.62	$378.69	$364.14	$325.38	$729.56	$379.02	(K-14) $306.26	$383.04	$252.95	$293.49
5. Teacher Student - Ratio	18	13.7	16.3	21.4	14.8	11.6	18.3	13.2	25.0	16.0

the same building with the high school generally arrive at their non-instructional costs in this manner. The total non-instructional cost for all students in the building is divided by the total number of students in high school and junior college. Then the junior college is assessed its proportionate share of the total cost based on the average cost per student. This generally speaking is less expensive then for a community to maintain a separate building for its junior college program. Flint maintains a separate building so does Grand Rapids, Muskegon and Port Huron. Port Huron shows an extremely low non-instructional cost for a junior college operated totally separate from other school facilities.

When the instructional cost and the non-instructional cost is combined we have a total per capita cost. This varies from a minimum at Muskegon of $252 per year to a maximum at Gogebic of $729 per year. In determining an average probably Gogebic should not be used because of the very small number of students which necessarily raises the per capita cost. Note above that the non-instructional cost alone at Gogebic was $251. The average cost if Gogebic is not used in determining the average is approximately $337.62.

D. Sources of Funds

The tuition information was shown in Chart No. 12 so let's move on over to finance. The last column shows the source of funds for the operation of these junior colleges for the 1948 school year. The designation "s-f" is student fees, "l" is local support or taxes, and "s" state support. Notice that for most

Michigan schools, student fees make up a rather large portion of the source of funds. There are two exceptions to that. One is Highland Park where the student fees are $80,000 and the local support $190,000. The other exception is Jackson where the local support is greater than the student fees. The general rule, however, is that the total amount of money collected from student fees is from one to two times as great as in some cases several times as great as is that from tax support. There were some communities in Michigan in 1948 where there was no tax support as far as the institution in concerned. One of these is Flint. The term "G-I" as the initials indicate is funds from the government in support of the educational program for service men in school.

Returning for a moment to the enrollment information as shown in Chart No. 13 a look at the college preparatory and terminal columns indicates that Michigan junior colleges for the most part do not have good terminal educational programs. One comment or two is in order here. First of all, Highland Park does have a terminal educational program; business education in particular and for some reason it was not reported in the 1948 year book from which this information was taken. The proper number to put in here is not known and for that reason it is omitted. Probably the reason why Michigan junior colleges did not develop terminal education programs is because they were receiving very little financial help from the state and in many cases very little from their local communities. So they offered that type of program

Chart No. 13
Michigan Junior Colleges 1948

Junior College	Present Plan	Enrollment by Grades 11-12-13-14	Enrollment Col. Prep.	Enrollment Termi-nal	Total Enrollment	Tuition	Finance	
Benton Harbor	2	76	64	12	76 m---60 w---16	res. 160 others 250	SF L S GI	10,000 10,500 772 1,000
Dearborn	2	317-	354	95	449 m--353 W-- 96 s-- 95	res. 100 others 180	SF L S S&S	67,000 24,000 12,000 1,000
Flint	2	(13)753- (14)189	885	57	942 m--751 w--191	res. 150 others 190	SF S GI	57,648 7,865 108,252
Gogebic Ironwood, Michigan	2	(13)276- (14) 52	328	93	421 m--380 w-- 41 s-- 93	res. 180 out of state 300	SF L S	60,000 4,000 10,000
Grand Rapids	6-6-2 6-2-4-2	(13)1416- (14) 496	1595	407	1912 m-1467 w--445	res. 120 others 170	SF S L	226,296 33,210 57,593
Highland Park	2	(13)1101- (14) 283	1384		1384 m--994 w--390	res. none others 200	SF L GI	80,986 190,031 190,884
Jackson	2	(13) 562- (14) 166	533	127	727 m--562 w--210 s-- 67	res. 80 110 others 210	SF L S	44,467 60,446 13,935
Muskegon	2	(13) 399- (14) 206	599	0	599 m--455 w--144	res. 150 others 175	SF S L GI	70,000 ------ ------ Aux. 5,000 3,000
Port Huron	2	(13) 301- (14) 240	476	65	541 m--415 w--126	res. 90 out of state 120 others 150	SF S L Aux	53,703 15,464 19,298 27,100

Enrollment Legend
m--men
w--women
s--special

Finance Legend
SF--Student Fees
L--Local Tax
S--State Support
GI--GI Finance
S&S--Sales & Services
Aux--Auxiliary

which is the least expensive to operate namely textbook courses. Vocational courses necessitate shops and laboratories and expensive equipment. It is interesting to note that since 1948 Michigan legislature has provided a sum of money to aid in the education of students at the junior college level. It's a fixed sum of money and the per capita amount varies with the number of students enrolled in the junior colleges in any given year. It has varied from something less than $100 to something as much as $135 or $140. In visiting at Muskegon, for example, which showed no terminal educational program in 1948, we found that Muskegon is now spending the greater portion of its time and effort developing terminal educational program. They were very proud of the advancement they had made in this particular field. While we didn't ask them specifically why they hadn't done it before and were doing it now, it was evident to us that the reason was the additional support given by the state.

VII. Junior College Costs of Operation[12]

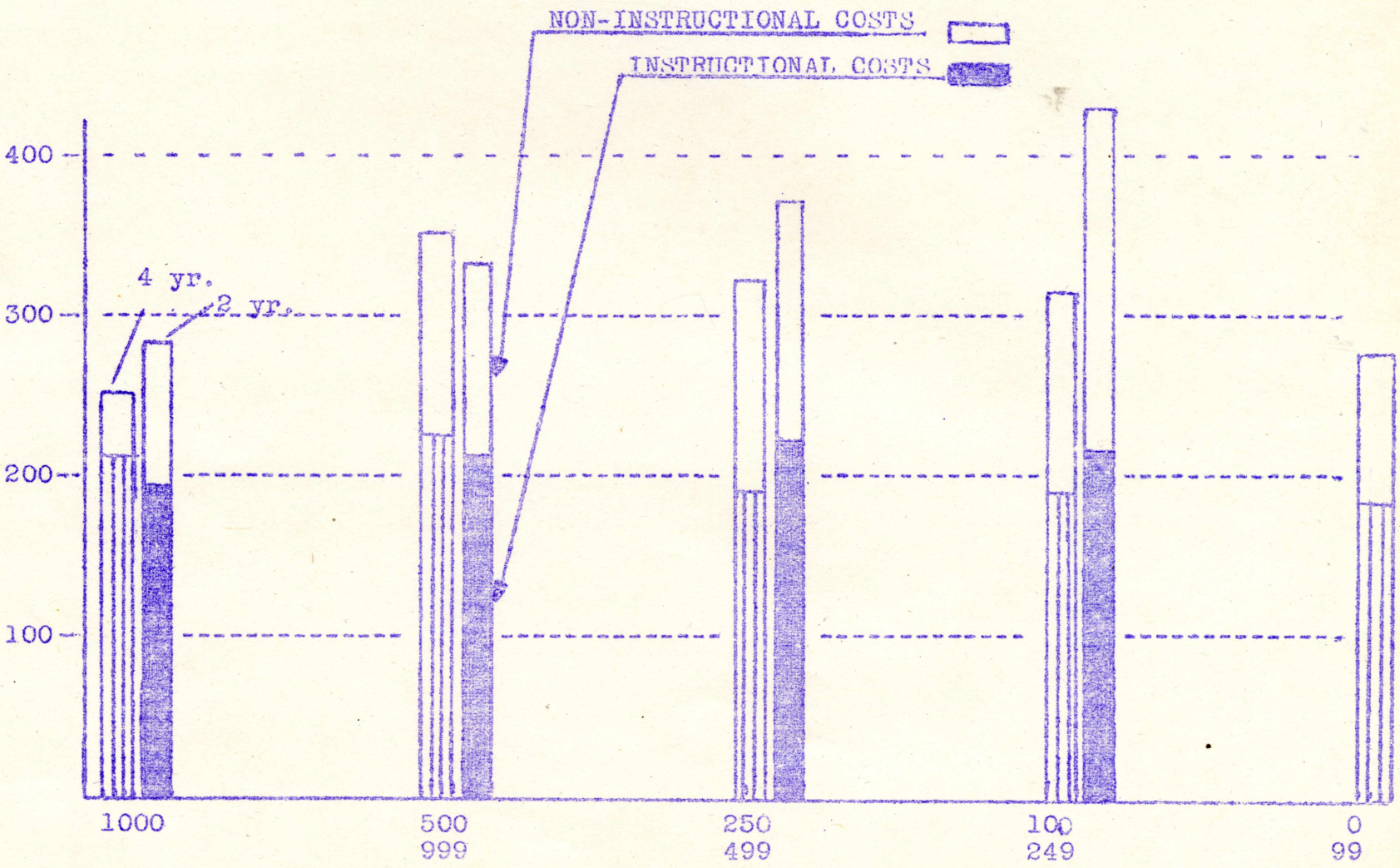
Per Student Cost of Operation

The committee making this study felt they needed some information in the field of cost of operation from the non-instructional and instructional standpoint but in addition to that from the organizational standpoint such as a two-year or a four-year and also from the viewpoint of the enrollment of the respective junior colleges. A research bulletin published by the American Association of Junior Colleges in October of 1949 revealed a study made on 135 public junior colleges to determine costs of operation for the school year 1948. This information is shown completely in Chart P of the appendix. The instructional and non-instructional costs are shown in Chart 14.

Starting at the left of Chart 14 we have junior colleges of enrollments of 1000 or more and as we move to the right we have enrollment groups of 500 to 1000, 250 to 500, 100 to 250 and less than 100. The vertical columns on the graph represent four-year and two-year schools, the shaded or darkened portion of each vertical column represents instructional costs, and the top part non-instructional costs. It is interesting to note that the instructional costs do not vary with the size of the school. This is readily understood when one realizes the number of teachers employed is adjusted to the total number of students enrolled to maintain as near as possible a constant student-teacher ratio. The non-instructional costs, however, cannot be varied according to student load. Most of them are fixed such as heat, light, maintenance of buildings, etc. Notice that these reach a minimum in a four-year institution with enrollments of 1000 or more and they become a maximum in the two-year institution with enrollments of 100 to 250. If one examines the costs at an enrollment of 100 to 250, we readily see that the non-instructional costs there are as great as the instructional costs and that to operate a community college or a junior college with an enrollment less than 100 to 250 as a separate institution is financially prohibitive. The four-year institution, however, shows non-instructional costs not too much greater than it did for the bracket of 250 to 500 enrollment. It is understood that the enrollments in the four-year college shown here are the enrollments for grades thirteen and fourteen only and the costs shown are per capita costs based upon the total enrollment of all students in the four-year institution. This tends to favor four-year institutions by showing lower per

Chart No. 14

PER STUDENT COST OF OPERATION
OF 135 PUBLIC JUNIOR COLLEGES



(RESEARCH BULLETIN, AMERICAN ASSOCIATION OF JUNIOR COLLEGES, OCT. 1949)

capita costs. This is particularly true in the enrollment groups of 100 to 250 and less than 100. To continue the breakdown of junior college costs of operation see Chart P in the appendix.

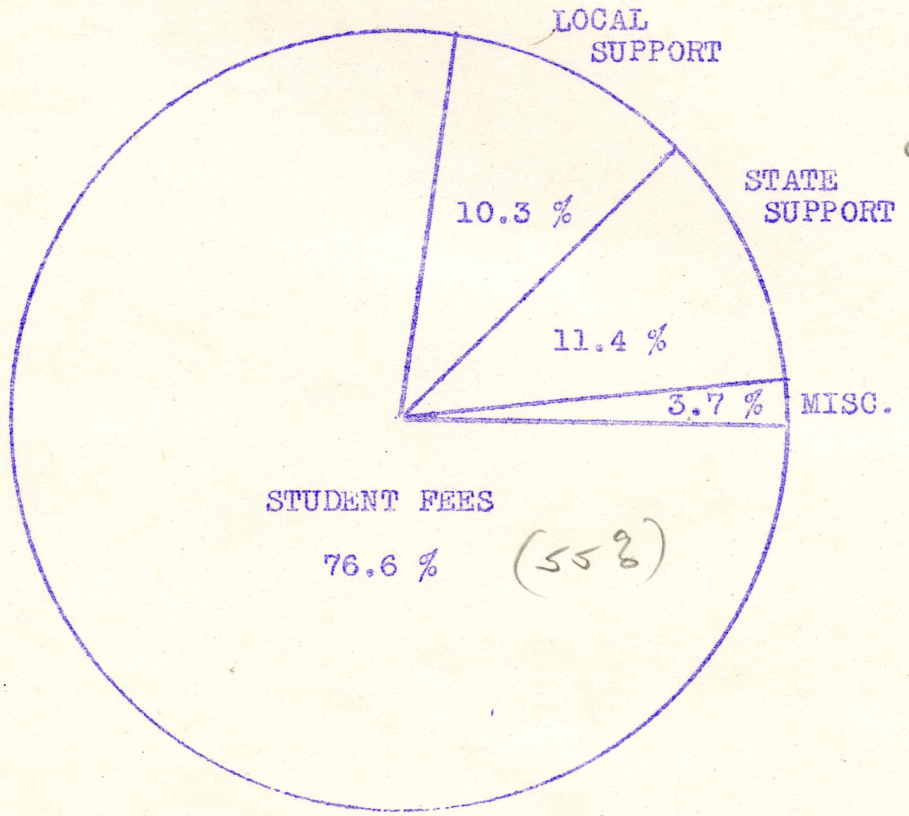
VIII. Michigan Junior College Financial Support 1948

To show the percentage of support from various sources for the total junior college program in Michigan for the year 1948 information from Chart No. 13 was compiled and is shown in a circular graph Chart No. 15. Here we see that more than 3/4 of the support for junior college operation in Michigan comes from student fees. About 10.3% local support, about 11.4% state support and about 3.7% miscellaneous. Since 1948 the legislature has provided funds for the support of Michigan junior colleges so that the state support now is a larger portion or percent of the total support. Data is not available to prepare a similar chart for the current school year.

If we would turn to Chart Q in the appendix we can see the cost per student in a typical Michigan junior college beginning with the 1937-38 school year and continuing up through the 1949-50 school year. We are particularly interested in the state's support and this is shown at the bottom of the chart under the title of "Income". In the 1947-48 school year state support was roughly $37.78 per student. It increased for the 1948-49 school year to $103.44. At this time the legislature appropriated a fixed sum of $300,000 as aid to junior colleges. It is allotted to the junior colleges on a basis of enrollment and for the 1948-49 school year was $103.44. If the figures for all junior colleges in Michigan for 1948-49 on finance were known a chart similar to No. 15 could be prepared. In all probabilities, if that chart could be prepared the state support would now be represented by

Chart No. 15

MICHIGAN JUNIOR COLLEGES FINANCIAL SUPPORT 1948



@ 37¢ each
130-140¢
51-52 sch
(about 30%?)

a figure approximating 30% of the total and the student fee would be reduced by a similar amount making them in the neighborhood of 56% of the total.

Per Student Cost of Operation

To continue with the investigation of the per student cost of operation let us refer to Chart P in the appendix.

IX. Estimates of Community College Enrollments[11]

Let us turn to Chart No. 16. W. C. Ells made a study of the enrollment of community colleges in California. He found that the enrollment in the thirteenth year should be 11% of the enrollment of grades nine through twelve in the same community and that the enrollment in the fourteenth year should be 6.6% of the enrollment of grades nine through twelve of that community. In 1955 grades nine through twelve will have an enrollment of 2221 students. Then grade thirteen as estimated by Mr. Ells should have an enrollment of 244 and grade fourteen should show an enrollment of 133 which shows a total enrollment of 377. In all probabilities the enrollment for Midland might reach this figure 377 in the year of 1955 providing the community college had been started a sufficient number of years earlier so that the terminal educational program had become well developed and well recognized and the pre-professional or the college transfer part of the program had become well recognized and accepted by the community. If we refer to the appendix to Chart R here we made an attempt to estimate an enrollment based upon the enrollment of communities similar to Midland some of which have comparatively new community college programs.

The figures above have been presented largely to show that it is very difficult to estimate with accuracy the anticipated enrollment in the community college in Midland. One other thing that should be recognized about the anticipated enrollment in Midland community college is this: Bay City will have a community college program, Saginaw will have a community college program, these two schools to the east and southeast; Alma already has a four-year established college to the southwest and Mt. Pleasant to the west also has a four-year established college. Midland can expect practically no transfer students except from the direction of Beaverton and Gladwin and then we can only expect transfer students if they are looking toward Dow or Dow Corning for employment. In other words, those transfer students will be terminal in nature and not pre-professional and the numbers will be small. If we were to make a guess at the probable enrollment of a community college in Midland, we believe that the total enrollment in a community college for the first year of operation probably wouldn't exceed more than 100 to 125 students for Grade 13. The second year of operation probably there would then be about the same number of freshman entering again and continuing on we would have perhaps 60 to 75 sophomores so the total enrollment the second year would be in the neighborhood of 200 for Grades 13 and 14. On the basis of the enrollments we've observed at Benton Harbor this would be a rather liberal estimate. Then we could expect about a growth of about 25 students per year. If the community college were started in 1955 we could reasonably expect that by 1960 we would have an enrollment not to exceed probably 325 students.

One other bit of information that might help estimating enrollment is Chart S in the appendix

All of these estimates of student enrollment are based on the assumption that these are full daytime students. They are not extended day students and they are not evening school or adult students. This anticipated enrollment for the daytime students is shown in Chart 17 beginning with the year 1955 continuing through 1961.

In addition to the daytime school students it is anticipated that there will be an extended day program beginning probably at either two or four o'clock. There are people coming into Dow and Dow Corning to work that need to make a four o'clock shift and there are also those who are leaving the four o'clock shift who, in all probabilities, would prefer to take an extended day program rather than to return quite some distance for the so-called adult evening school program. We believe that by 1955 if this organization was in existence, that in all probabilities we would have a minimum of 50 to 100 students in this extended day program. As a matter of fact, some inquiries have already been made into the possibilities of this program. In 1961 this extended day program probably would reach an enrollment between 150 and 200 students as a minimum.

The adult evening school enrollment at the present time is approximately 600 students enrolled in classes of 20 to 40 hours of instruction with the 40 hour class predominating. The type of class represented by the adult evening school at the present and the number of persons enrolled in each type of class is shown in Chart 21. Here the classes are divided into the

Chart No. 16

ESTIMATE OF COMMUNITY COLLEGE ENROLLMENT

W. C. Eells shows that the enrollment in the 13th year should be 11% of the enrollment of grades 9 through 12 and the enrollment in the 14th year should be 6.6% of the enrollment of grades 9 through 12.

In 1955 grades 9 through 12 will have an enrollment of 2221 students.

Grades 9 through 12	Grade 13	Grade 14	Total
2221	244	133	377

12th grade
418

so-called professional, the terminal and the avocational type of class. With an enrollment of 600 in these classes in 1951 we believe that the enrollment could very readily reach a total of 1000 in 1961.

It is well to call attention to the fact that the total enrollment shown in the community college for 1961 is some 2500 students, but a building does not have to be built for 2500 students. A building which is large enough to accomodate the 1500 students which we believe we would have at that time in grades 11, 12, 13 and 14 would, if properly planned, also accommodate the extended day student and the adult evening school student. In other words this does not mean a larger building it merely means a well planned building which will serve several needs and can be used several times within the same twenty-four hour period by at least three different school groups.

X. Pre-Professional Education

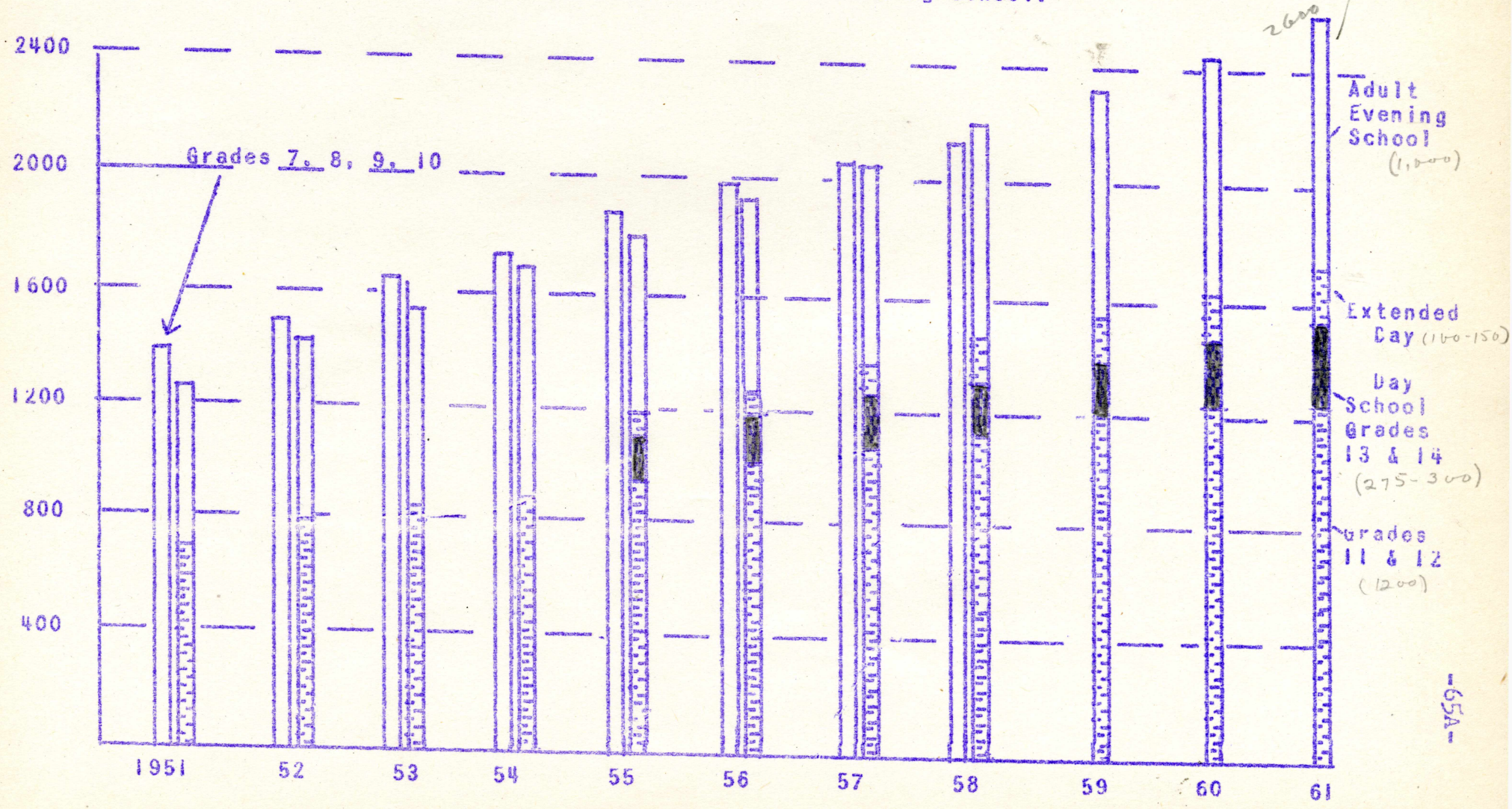
A. Curricula

Let us turn to Chart No. 18. Here we have represented the possible areas of study within a community college program such as psychology, communications, mathematics, social studies, agriculture, public relations, art, business education, shop and drafting or industrial arts and science. By a proper guidance program students could select subject matter from these areas of training such that they would receive a program of training similar to that given in a four-year institution for the first two years in such pre-professional areas as teaching, medicine, industry, nursing, architecture, law, engineering, chemistry, business, physics, pharmacy, mortician,

600 class enrollments
500 individuals

Chart No. 17

ESTIMATED INTERMEDIATE AND COMMUNITY COLLEGE ENROLLMENT
The Community College enrollment includes the Day School, Extended Day School and adult Evening School.

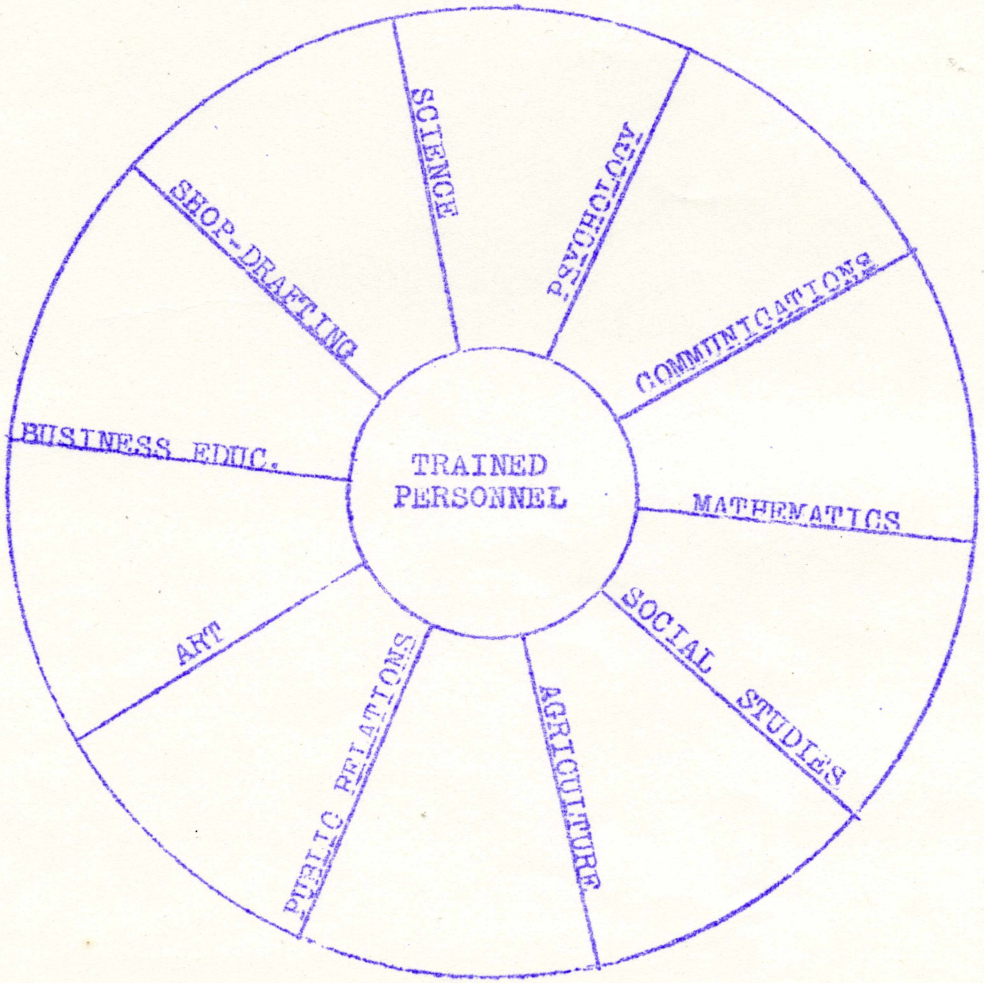


journalism and liberal arts. In only one of these areas would it be desirable that a student remain in the junior college or community college for only one year. That is in the field of architecture. In this field a student should be in the architectural school of the university the beginning of his sophomore year regardless of whether he begins as a freshman in a junior college or in a four-year college which does not have the school of architecture.

Let's refer to Chart No. 19 which shows the enrollment by curricula for a Michigan junior college for the 1950-51 school year. In the field of business and business administration we find students enrolled in the general business, medical secretary, secretary, pre-business, airline hostess. The total enrollment here is 76. The field of education we find county normal, pre-education, and industrial arts. The county normal is a two-year terminal program. The pre-education is the first two years of regular four-year teachers training and the industrial arts is either a terminal program or the first two years of a regular four-year college training in the field of industrial arts. Total of 70 enrolled here. Medical arts we find dental and medical students, medical technicians, nursing pharmacy students. Total 42. Engineering arts we find semi-professional, pre-engineering, architectual and the landscape students a total of 66. In law, twelve are enrolled, journalism - 3, morticians - 8, police administration - three, and liberal arts - 81.

Chart No. 18

COMMUNITY COLLEGE
REGULAR DAY AND EXTENDED DAY PROGRAM
TERMINAL
and
PRE-PROFESSIONAL



TERMINAL

Office Occupations
Lab. Worker
Draftsman
Machinist
Electrician
Instrumentman
Toolmaker
Welder
Medical Technican
Advertising
County Normal
Accounting
Farmer
Auto Mechanic

PRE-PROFESSIONAL

Teaching
Medicine
Dentistry
Nursing
Architecture — 1 yr.
Law
Engineering
Chemistry
Physics
Business
Pharmacy
Mortician
Journalism
Liberal Arts

Accreditation and Transfer

B. Accreditation.

Midland High School is accredited by the University of Michigan and the North-Central Association of Secondary Schools and Colleges. We do not anticipate any difficulty in having a community college accredited by these same two organizations. All classes at freshmen and sophomore levels of college training or grades thirteen and fourteen should be taught by teachers having a Masters degree. More than half of the high school faculty already have Masters degrees and a rather large number of the remaining members of the faculty are working toward a Masters degree. We do not anticipate a lack of properly trained personnel in any area of instruction in a community college.

C. Quality of Program.

See Chart T in Appendix.

D. Transfer.

The transfer of students from a junior college to a regular four-year college has already been established in Michigan as well as in other states. The academic record maintained by these transfer students from the junior college to the regular year college has been a very creditable one. In fact these students maintain better scholastic standings in their junior and senior years at the four-year college than do the regular students who entered the four-year college as freshmen. This incidently should not be interpreted as a reflection on the teaching in the four-year college during the freshmen and sophomore years rather it is an indication of the fact that the transfer students found it necessary in some instances at least to attend

the junior college, help work his way through the first two years of his training, save as many funds as possible for the last two years of training at the senior college where the program is necessarily more expensive. There is no doubt in this student's mind as to how he arrived at the senior college, there is no doubt in his mind as to what is necessary in his case in regard to the quantity and quality of work that he is to do at the senior college once he has arrived. His motivation is much greater toward doing a very creditable piece of work. Several studies have been made of the records attained by these transfer students and all of the studies so far reported indicate that the transfer student maintains a very satisfactory academic record for his junior and senior years at the four-year institution.

XI. Terminal Education

To determine the need for a terminal education program, members of grades 13 and 14 committee interviewed administrative personnel of Dow Chemical Company, Dow Corning Corporation, Austin Company, Pure Oil Company, City of Midland, Midland Daily News, Midland Chamber of Commerce, McKay Press and Midland Hospital.

A summary of these interviews will be found in Chart U in the appendix. A job inventory for Midland is shown in Chart V in the appendix.

The material collected from these interviews has been reproduced here. Those areas of instruction which have been marked by an * indicate contributions that could be made by a community college. If the community college was to give instruction in

these areas it probably would be given as terminal education to daytime students - as related instruction of an on-the-job training program to the extended day student and as a portion of the adult education program in the evening.

By proper guidance students may select subjects from these areas of study shown in Chart 18 such that they may train themselves in a terminal educational program over a one or two year period beyond high school in such areas as stenographer, lab worker, draftsman, machinist, electrician, instrument man, tool maker, welder, medical technician, advertising, county normal, and farmer. The terminal educational program is an upward extension of the present vocational program in the high school. It is anticipated that our present cooperative training program will grow and enlarge to the point where these students would be given the related instruction in school during a portion of the day and the actual on-the-job experience during the other portion of the day. We believe that this could be done in most fields listed here except possibly the county normal program. Here the amount of material in the way of related instruction may be so great that it would be difficult to work in the work experience program. If that is not true we think that there would be considerable advantage in the work experience program as a part of county normal training.

XII. Adult Education

If we refer to Chart No. 21 here we see the present adult education program of the Midland Public Schools for the 1951-52 school year. This program has been divided into three areas:

Chart 19

Typical program of Michigan Junior Colleges at the present time.

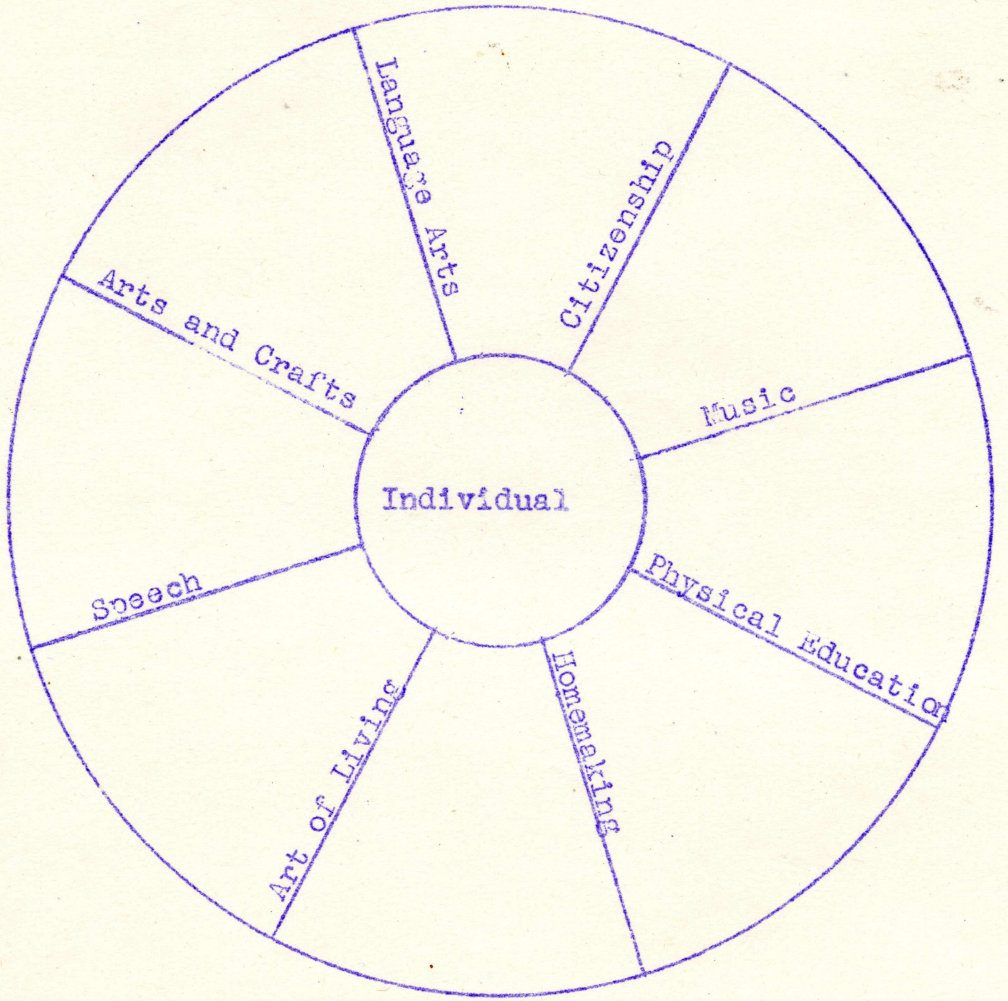
(Bay City 5-1-52)

Business:	Accounting, General Business, *Medical Secretary, *Secretary, Pre-Business, and Air Line Hostess	 76
Education:	*County Normal, Pre-Education, Industrial Arts	 70
Medical Arts:	Dental, Medical, *Med-Technician, Nursing, Pharmacy	 42
Engineering Arts:	Semi-Professional, Pre-Engineering, Architecture, Landscape	 66
Law:		 12
Journalism:		 3
Pre-Mortician:		 8
Police Administration:		 3
Liberal Arts		 81
	Total	361

(Only those marked (*) are terminal curricula. Midland expects to have many more one and two year terminal programs.)

professional, terminal and avocational. In the professional area the following classes have been offered during this school year. Psychology for graduate or under-graduate credit, training of supervising to be offered yet this year for either graduate or under-graduate credit, chemistry general under-graduate credit, educational measurements graduate or under-graduate credit, advanced organic chemistry, graduate credit; chemical kinetics, graduate credit; engineering refresher course for those taking the engineering examination for registered engineers. In the terminal area welding, of which three classes have been completed, cabinet making, three classes; blue print reading and drafting, two classes; machine shop, one; stenography, two; and typing, three classes. Avocation field we have classes in music appreciation, lip reading, English for new citizens which also involves some citizenship training and interior decorating, art and driver training. This is only the adult education offered by the Midland Public Schools. In addition to this the County Board of Education through the County Superintendent of Schools have an in-service program for rural teachers. The Community Center offers several areas of instruction and the Dow and Dow Corning have many on-the-job training programs. The amount of instruction that is being given by the Midland Public Schools in the adult education field is growing very rapidly at the present time. One additional area that could be included here under professional training is that for chemical engineers which we hope to start in September of 1952.

Chart No. [illegible]
COMMUNITY COLLEGE
EXTENDED DAY PROGRAM
-Avocational-



Hand crafts
Fine arts
Interior Decorating
Creative Writing
Dramatic Reading
Family Living
Home Nursing
Cabinet Making
Hobby craft
Music Appreciation

Dancing
Lip Reading
International Affairs
Problems in Democracy
Public Speaking
Play Production
Parlimentary Procedure

In a good community college there should be an opportunity for an extended day program of classes in at least two of these areas probably the pre-professional and terminal and possibly avocational. By an extended day program we mean the period from say four to six in the afternoon. There should also be an opportunity if the need arises, and it certainly will, in the evening school which would generally be referred to as the period after six. Community colleges generally find that the enrollment in the extended day and evening school exceeds by far the enrollment in the day school. The total of 577 students have already enrolled for these adult education classes. Each class is organized for a minimum of thirty hours of instruction in the professional fields and generally forty hours of instruction in the terminal and avocational fields. In many instances in the terminal field the same students have continued on for a second semester's work. The total enrollment of more than 597 students with the rather meager offerings that we have at the moment indicates that with a well organized adult education program as a part of the community college it would not be difficult, we believe, to multiply this number by three or four which would give an adult enrollment exceeding that of the daytime enrollment which is the usual experience of community college.

XIII. Athletics

Chart No. 22 shows the intermediate schools, the community college, the grades involved by groups in each the intermediate school and the community college and the type of competition that we would anticipate for each of these schools and the sport in

CHART No. 21

ADULT EDUCATION 1951-52

Professional	Terminal	Avocational
22 - Psychology	65 - Welding	25 - Music Appreciation
18 - Training & Supervising	48 - Cabinet Making	22 - Lip Reading
15 - Chemistry, General	30 - Blue Print Reading - Drafting	12 - English - New Citizens
33 - Educational Measurements	12 - Machine Shop	24 - Interior Decorating
27 - Advanced Organic	30 - Stenography	15 - Art
25 - Chemical Kinetics	45 - Typing I, II	64 - Driver Training
40 - Engineering Refresher	15 - French	
25 - Chemical Thermodynamics		

Dow Ed Dept

waiting list

60 Chem Eng.

E 714.2

Chart No. 22

ATHLETICS

	GRADES	COMPETITION	SPORT
Intermediate	7- 8	Largely within the community	
Schools	9-10	Inter City Reserve Squad	Football, Basketball Tennis, Track, Baseball Golf
Community College	11-12	Inter City Varsity Squad	Football, Basketball Tennis, Track, Baseball Golf, Cross Country
	13-14	Inter City Junior College	Basketball, Tennis Track, Baseball, Golf

which competition would be encouraged. Grades seven and eight probably competition in sports would remain largely within the community as it does at the present time. Grades nine and ten competition would be inter-city and this would be the reserve squad very much as was true when ninth grade was in high school. Competition here would be in football, basketball, tennis, track, baseball and golf. In the community college level grades eleven and twelve would be grouped together. They would have inter-city competition the same as now and they would be known as the varsity squad the same as now and play the same schools they play now. Competition would be football, basketball, tennis, track, baseball, golf, and cross country. Grades thirteen and fourteen would be inter-city and this would be known as the community college team and they would be playing other junior colleges or they could play the junior varsity of the regular four-year colleges. They would participate in basketball, tennis, track, baseball and golf. Football has been omitted here for perhaps two reasons. One is, that most students who are intensely interested in playing college football would probably not want to remain in the community college because it takes away two years of eligibility for them when they transfer to a senior college. Junior colleges throughout Michigan have found this to be true and with the exception of Grand Rapids and Port Huron they do not participate in football. One other reason for not including football at the present time is that football is one of the more expensive sports and the interest shown by spectators has

not been such that it is a financially self-supporting sport for junior colleges. For these two reasons we do not anticipate we would participate in football. We do expect to participate in the other sports.

Quality of Program

It would be very much in order to question the quality of program that we think we might maintain in a Midland community college particularly in the pre-professional areas where we expect students to transfer to a senior college and complete at least four years of college training. Let us refer to Chart T in the appendix.

XIV. Finance

A. Present cost of education in college for Midland students.

At present Midland students are spending from $700 to $1,100 per year for their college education. Of this amount $550 is for room and board as a minimum. About $135 per year as an average for tuition. If the student lived at home, the room part of board and room could be saved which would be $175 to $200. The tuition could be saved $135 in a resident tuition-free institution. A portion of the board could be saved in that the student living at home does not pay for the preparation of food possibly $75. This would result in a total saving of:

Tuition	$135
Room	175
Board	75
Laundry	25
Total Saving	$410

For convenience lets say $400 since the figures used above are not exact.

Additional Cost of Educating Midland College Students Outside of Midland

Year	Enrollment in Grades 13 & 14	Average Saving Per Student	Total saving that formerly was spent outside of Midland but could be spent inside of Midland
1955	125	400	$ 50,000
1956	180	400	72,000
1957	189	400	75,600
1958	198	400	79,200
1959	207	400	82,800
1960	216	400	86,400
1961	223	400	89,200
1962	231	400	92,400
1963	241	400	96,400
			$724,000

XV. Summary

Probably no conclusion is necessary in this report on Midland's proposed Community College since all the material was gathered, organized and edited by a faculty committee of the high school. This faculty committee approached this problem as a professional study in which they believed they needed to gather as much information as possible about the Community College so that when the time came for them to offer professional help in the planning of this program they would be in a position to do so. At the time this study was progressing it was believed by this faculty committee that the information they might gather, organize, edit and finally present would be presented to the Midland Board of Education, and they in turn would use it in whatever way they found beneficial. With this in mind no conclusion or recommendation to the Board of Education seems necessary nor advisable.

We realize that the report is not complete. We believe that in all probabilities it is complete enough so that the Board of Education and lay people can begin the study of the community college with this information as a background and if and when they need additional materials this same committee of high school teachers stand ready to try to collect such information as is necessary to further the study of the community college.

Bibliography

1. Growing Schools for a Growing Midland, Board of Education 1947-48

2. Leonard V. Koos, Integrating High School and College, Harper Bros. 1946

3. W. C. Eells, Why Junior College Terminal Education American Association of Junior College 1941

4. Higher Education for American Democracy. A Report of the Presidents Commission on Higher Education, U. S. Printing Office Washington, D. C.

5. Jesse P. Bogue, The Community College, McGraw-Hill 1950

6. Sexon, John A., and Harbeson, John W., The New American College Harper Bros.

7. Johnson, B Lamar, "Patterns of General Education", Junior College Journal XVII October, 1946.

8. W. C. Eells, American Junior Colleges American Council on Education, Washington, D. C. 1940

9. S. V. Martorana, Junior College Journal, February, 1948 Vol. XVIII

10. How Midland Schools Work, Board of Education, June, 1947

11. W. C. Eells, Present Status of Junior College Terminal Education, American Association of Junior Colleges, 1941

12. American Association of Junior Colleges Research Bulletin October 1949.

Supplementary Bibliography

Pre-Professional

1. Syracuse University Looks at its Junior College - Transfers - Ruth Maguire - Junior College Journal - October, 1949 Vol. XX

2. Successful Transfers in Engineering - H. P. Rodes - Junior College Journal - November, 1949 Vol. XX

Semi-professional

1. Pre-Nursing Curriculums in 116 Junior Colleges in the United States - Charlotte Seyffer Junior College Journal September, 1949 Vol. XX

2. Influence of Accreditiation Standards Upon the Junior Colleges B. H. Peterson Junior College Journal September, 1949 Vol. XX

3. Agricultural Education in Junior Colleges Winston C. Strong, Junior College Journal October, 1949 Vol. XX

4. Terminal Curriculums Offered in Public Junior Colleges in the United States - M. A. Hillmer Junior College Journal, November, 1949 Vol. XX

5. Examinations to Facilitate Transfer to Junior College Graduates to Senior Colleges. Engelhardt, Max D. Junior College Journal February, 1950 Vol. XX

6. "Vocational Education in the Junior College" State Department of Education, California

7. Ward, Phoebe. Terminal Education in the Junior College. Harper and Bros., 1947

General Education

1. Reynolds, James General Education and the Junior College - Junior College Journal - January, 1950 Vol. XX

2. General Education Answer to a Challenge - W. Hugh Stickler and James P. Stokes - Junior College Journal March, 1950 Vol. XX

3. An Experience in Evaluation Harold Trimble and LeRoy E. Babcock Junior College Journal - March, 1950 Vol. XX

4. Teaching Humanities at the Junior College Level - Dorothy Weil Junior College Journal October, 1947 Vol. XVIII

5. General Education Program of One Thousand Girls - Kenneth Freeman Junior College Journal - March, 1948 Vol. XVIII

6. Functional Family - Life Education in Junior Colleges. S. V. Martorana - October, 1948 Vol. XIX

7. A Design for General Education: For Members of the Armed Forces American Council on Education Studies, Series I 1944

8. Johnson, B. Lamar "Patterns of General Education" Junior College Journal XVIII October, 1946

Adult Education

1. Problems in Adult Education in the Junior College S. V. Martorana - Junior College Journal - November, 1947 Vol. XVIII

2. Martorana, S. V. "Status of Adult Education in Junior Colleges" Junior College Journal XVIII February, 1948

Guidance

1. Problems of Junior College Students - Junior College Journal March, 1950 Vol. XX

2. Placement and Follow-up in Junior Colleges - Charlotte Meinecke Junior College Journal October, 1948 Vol. XIX

3. A Philosophy of Education for Counselors Roy Johnson Junior College Journal March, 1949 Vol. XIX

Personnel

1. Junior-College Teachers: Degrees and Graduate Residence Leonard Koos October, 1947 Vol. XVIII

2. Junior College Teachers: Background of Experience Leonard Koos Junior College Journal April, 1948 Vol. XVIII

3. Junior College Teacher Salaries: Policies and Practises S. V. Martorana - Leonard Koos Junior College Journal November, 1948 Vol. XIX

4. Programs of Junior College Teacher Preparation - Leonard Koos Junior College Journal - February, 1949 Vol. XIX

5. Junior College Teacher's Co-operations Leonard Koos Junior College Journal March, 1949 Vol. XIX (Extra curriculum Assignments)

6. Preparation for Community College Teaching - Leonard Koos Journal of Higher Education June, 1950 Vol. XXI

Organization and Finance

1. Sources of Income for the Junior College Budget A. C. Colvert Junior College Journal September, 1949 Vol. XX

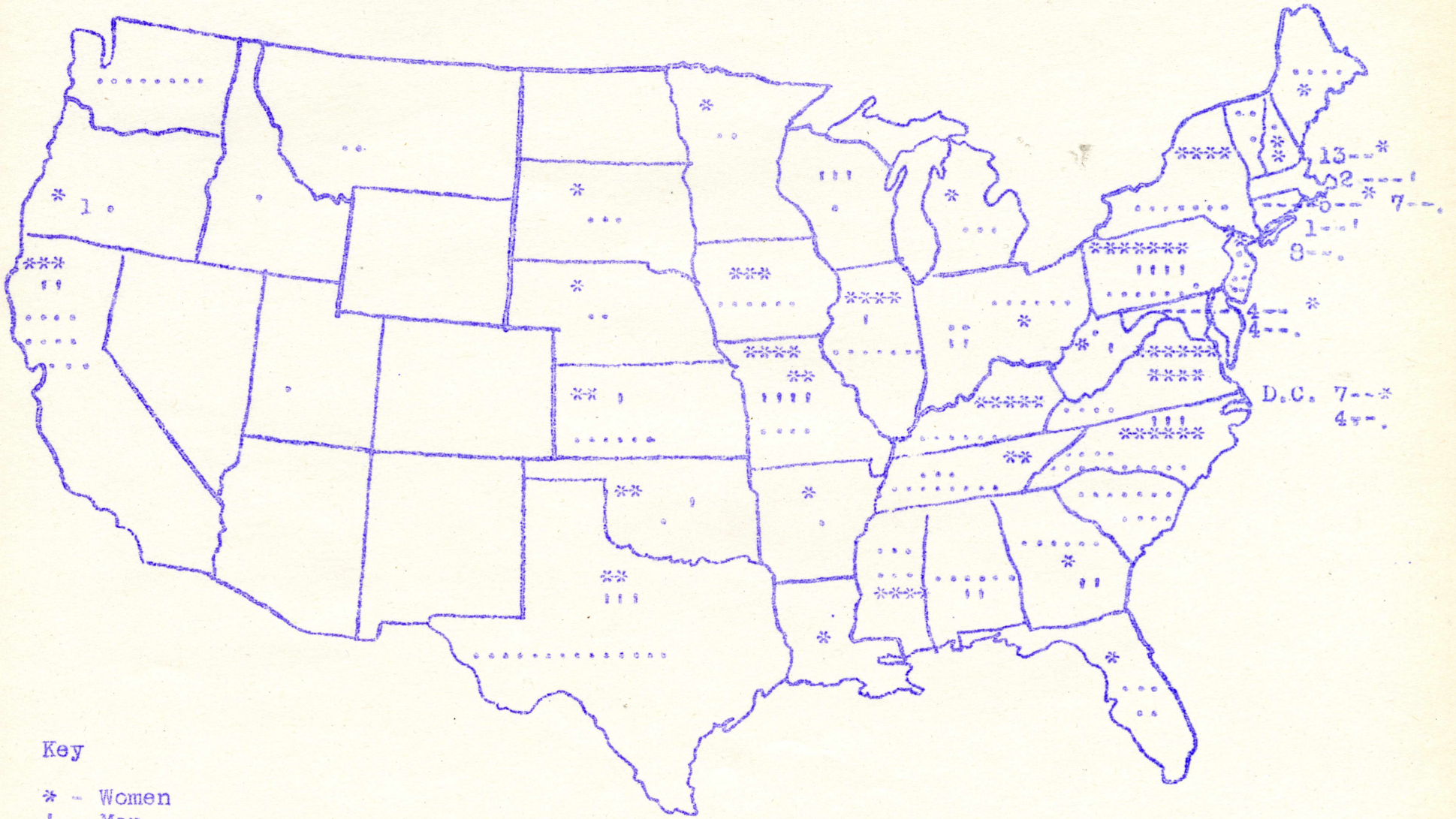
2. Sources and expenditures of Student Activity Fees in the Community - Junior Colleges of Illinois E. N. Curry Junior College Journal November, 1949 Vol. XX

3. Recent State Legislation Affecting Junior Colleges S. V. Mortorana - Junior College Journal January, 1950 Vol. XX

4. The Junior College's Full Scope of Function Leonard V. Koos Junior College Journal October, 1947 Vol. XVIII

5. Recent Junior College Legislation - Hugh Price Junior College Journal April, 1948 Vol. XVIII

Private Junior Colleges W.C. Eells Present status of Terminal Education
American Association of Junior Colleges 1941



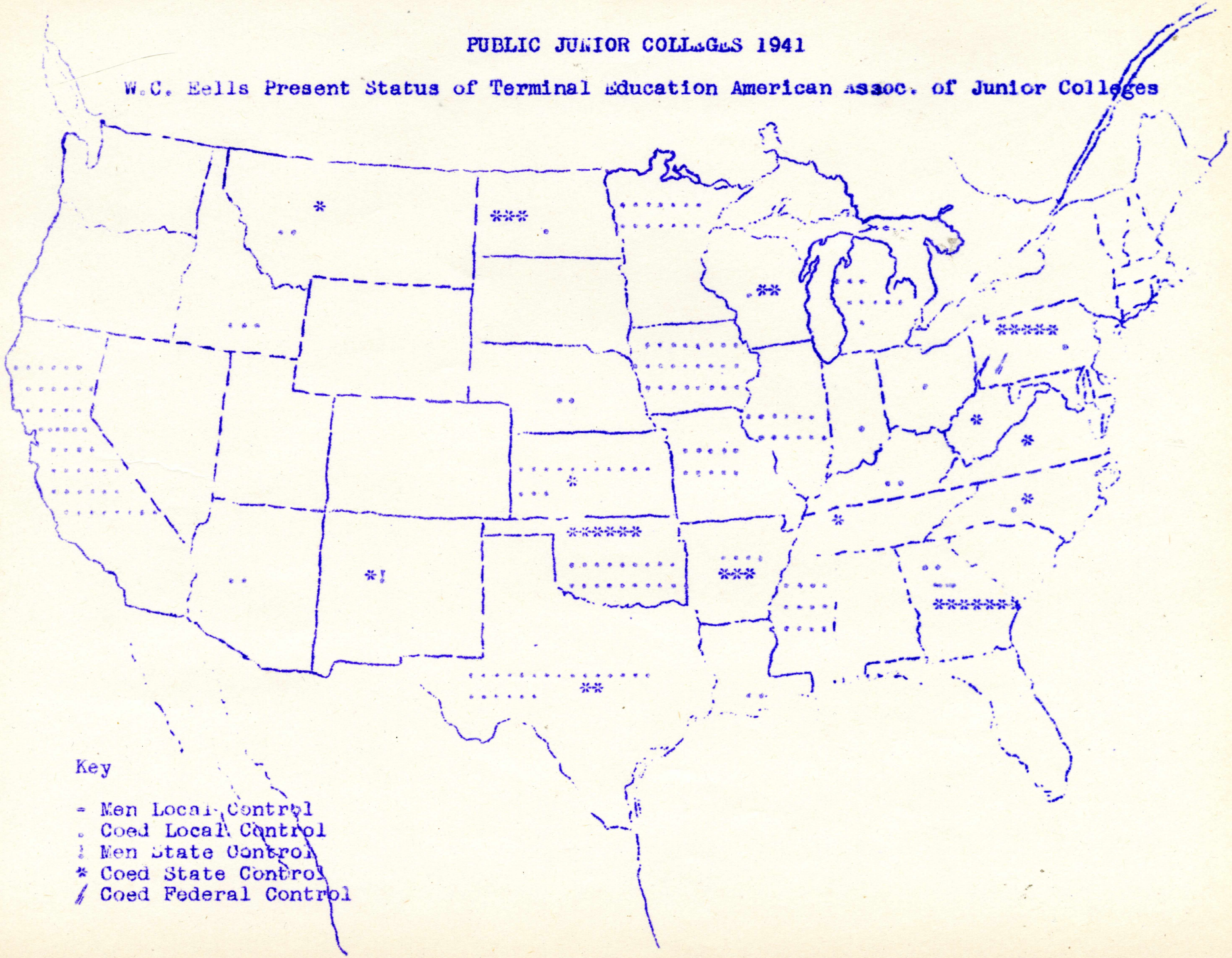
Key

* - Women
! - Men
. - Coed

A

PUBLIC JUNIOR COLLEGES 1941

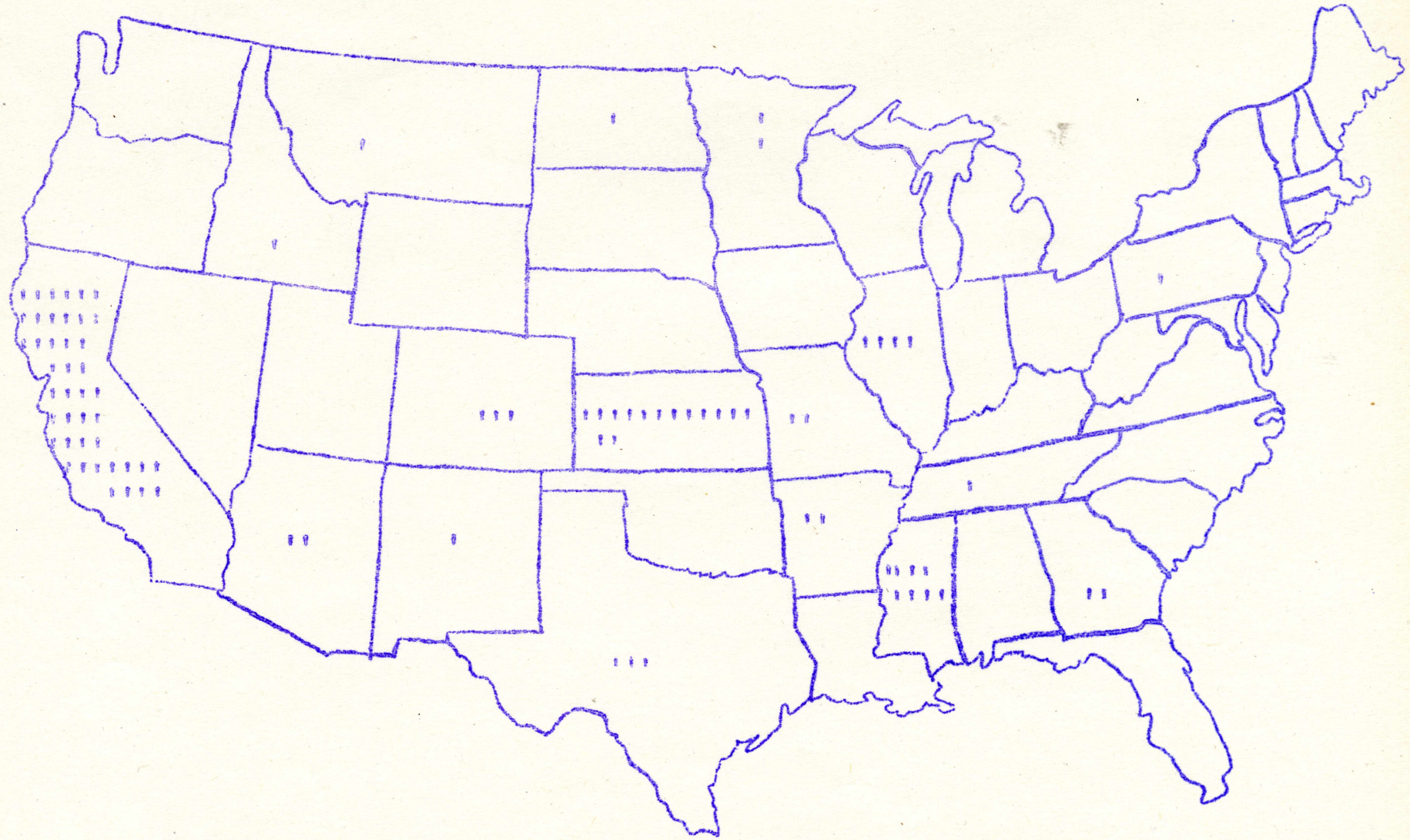
W.C. Eells Present Status of Terminal Education American Assoc. of Junior Colleges



Key

- Men Local Control
. Coed Local Control
! Men State Control
* Coed State Control
/ Coed Federal Control

Map showing location by states of Public Junior Colleges in which no tuition is charged. W. C. Eells American Jr. College 1940



GROWTH OF JUNIOR COLLEGES

	Number of institutions in 1922	in 1950
Local Public Junior Colleges	46	260
Private Junior Colleges	137	300
Normal Schools offering 2 years Liberal Arts Programs	24	60
Totals	207	620

1952 - 65

Enrollments for September 1951

District	Grade											Total
	1	2	3	4	5	6	7	9	10	11	12	
Beaver												
#2 Cherry	9	5	3	3	1	2	3	5				31
#3 Duel	2	2	0	4	3	6	2	0				19
#4 McKeith	2	1	4	1	1	3	4	4				20
Edenville	14	12	12	11	9	6	7	8				79
Homer												
#1 Barnes	6	3	7	7	6	5	4	6				44
#3 Fulmer	6	6	5	8	6	5	18	8				62
#4 Pine	5	9	2	7	10	7	5	7				52
#6 Windover	20	14	29	16	18	20	18	7				142
Hope												
#1 Hope	1	6	7	4	5	6	8	6				43
#2 Maxwell	6	3	3	1	3	6	4	1				27
#3 Clark	7	6	5	7	3	3	3	0				34
#4 Block	0	3	3	4	1	2	3	1				17
Ingersoll												
#1 Laporte	9	12	11	7	17	2	11	12				81
#2 Wright	2	4	4	2	1	0	1	0				14
#3 Bartlett	3	1	3	5	3	2	1	3				21
#4 Poseyville	7	7	6	4	2	2	4	6				38
#6 Phetteplace	5	3	11	8	6	9	2	7				51
#8 Bishop	5	3	4	2	5	7	4	3				33
#10 Crane	7	11	10	10	8	11	8	7				72
Jerome												
#1 Sanford	19	34	31	34	23	26	24	27				218
#2 Pioneer	1	6	1	9	4	4	2	5				32
#3 McNett	Combined with Jerome #1											
#4 Felix	1	2	2	1	3	4	3	0				16
#5 Meridian	8	6	6	6	6	9	5	8				54

District	Grade												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Larkin													
# 1 Gray	6	1	7	5	8	6	5	7					55
# 2 Cady	16	17	11	11	16	18	transported to city						89
# 3 Hubbard	3	2	0	5	3	0	2	1					16
# 4 Liephart	6	4	8	3	9	10	5	6					51
# 5 Waldo	3	4	5	3	4	7	3	5					34
# 6 Cassaday	2	0	5	1	7	0	0	6					21
Lee													
# 1 Olson	7	9	7	4	8	2	5	6					48
# 2 St. Elmo	5	6	6	4	15	6	3	3					48
# 3 Floyd	16	10	12	17	16	11	9	10					101
# 5 Little Salt	4	2	3	3	1	1	2	0					16
Lincoln													
# 1 Averill	10	11	11	7	11	3	12	6					71
# 2 Bensch	6	13	6	9	8	11	5	3					61
Midland													
# 1 Mapleton(Bluff)	11	10	12	11	7	11	7	8					77
# 2 Cook	12	7	17	14	16	12	10	8					96
# 5 Bullock Creek	39	26	30	25	33	22	27	30					232
# 7 Barrett	8	14	8	13	3	11	8	5					70
# 8 Glasgow	17	16	18	15	10	17	transported to city						93
# 9 Bailey	6	3	7	1	1	4	0	5					27
#13 McGill	61	59	58	77	53	47	57	transported to city					412
Mills													
# 1 Brier	2	0	3	4	4	2	3	1					19
# 2 McLaren	6	10	10	10	7	8	4	8					63
# 3 Mills Center	3	1	3	1	6	1	5	1					21

District	Grade												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Mt. Haley													
#2 White	4	7	5	5	2	9	5	5					42
#3 Valliere	5	2	5	8	8	3	1	4					36
#5 Gordonville	11	9	7	7	9	10	6	9					68
#6 Brooks	2	2	6	5	8	4	6	1					34
Williams													
#2 N. Williams	2	0	8	2	6	3	1	1					23
#3 Auburn	8	22	8	16	11	12	14	7					98
#4 Lefever	3	3	7	4	4	5	3	7					36
#5 Forrest	12	8	12	15	8	12	0	0					67
#6 Fisher	5	2	2	3	3	2	4	3					24
Parochial													
St. Brigid	55	55	56	70	54	48	36	32					406
St. John	7	4	10	6	12	9	8	11					67
City of Midland													
Carpenter	78	69	76	74	68	58							423
Dow	11	8	10	6	8	10							53
Eastlawn	87	80	90	69	67	54							447
Patterson	4	6	3	0	0	0							13
State	58	48	49	56	57	57							325
Sugnet	112	100	90	53	58	68							481
Central Int.							134	124	252				510
Northeast Int.							163	190	284				637
Senior High										445	406	328	1179
Totals	858	819	860	803	773	721	697	644	536	445	406	328	7895

TOTAL AND AVERAGE NUMBER OF SUBJECTS OFFERED BY THE 17 FOUR-YEAR AND THE 34 THREE-YEAR JUNIOR HIGH SCHOOLS.

Grade & Type of School	Total Number of Subjects of all Schools	Average Number of Subjects per School
Grade 7		
Four-year	204	12.00
Three-year	375	11.03
Grade 8		
Four-year	231	13.59
Three-year	417	12.26
Grade 9		
Four-year	341	20.06
Three-year	511	15.03
Grades 7-8-9		
Four-year	766	45.65
Three-year	1303	38.32
Grade 10	347	20.41

GUIDANCE RELATIONSHIP AND TYPE OF JUNIOR COLLEGE ORGANIZATION 2

Information was collected from 60 local public junior colleges. Questionnaires were used which were followed by personal visits. The junior colleges represented the separate two-year, the associations, and the four-year. The guidance programs were separated into the following groups.

1. High school guidance and junior college programs entirely independent. These are represented as "entirely independent."
2. High school and junior college guidance programs separate but a voluntary cooperation exixting. These are represented as "voluntary cooperation."
3. High school and junior college guidance programs are unified and coordinated. These are represented as "unified and coordinated."

Table below shows the number of junior college and high school guidance programs which fall into each of the above classifications.

NUMBERS AND PERCENTAGES OF JUNIOR COLLEGES OF EACH TYPE OF ORGANIZATION WITH GUIDANCE PROGRAMS (1) ENTIRELY INDEPENDENT OF, (2) IN VOLUNTARY COOPERATION WITH, AND (3) UNIFIED AND COORDINATED WITH GUIDANCE PROGRAMS IN HIGH SCHOOL YEARS.

Type of Organization	1. Entirely Independent		2. Voluntary Cooperation		3. Unified and Coordinated		All	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Separate two-year	10	50.0	7	35.0	3	15.0	20	100.0
Association	6	21.4	16	57.1	6	21.4	28	99.9
Four-year	1	11.1	2	22.2	6	66.7	9	100.0
Total	17	29.8	25	43.9	15	26.3	57*	100.0

* All but 3 of the 60 local public junior colleges represented in this special investigation supplied information on the relationship of guidance programs at the two levels.

Chart G shows the findings of the relationships that exist as far as the guidance program is concerned. The guidance programs here are described as being entirely independent if there's very little follow-through or coordination between the high school guidance program and the junior college guidance program. Those guidance programs are described as voluntary cooperative providing there is some transfer of information concerning the student as he progresses from the high school to the junior college, in other words, if the junior college people would request the information the high school people would make it available. The other guidance program is described as unified and coordinated if the same guidance person follows the program for a given student all the way through high school and the junior college. Now let's have a look at the Chart G. Again the schools are divided as separate two-year institutions, association and four-year and the study covered some 57 junior colleges. First of all in the separate two year type of institution we find that ten of these were entirely independent of high school and that represented 50% of the separate two-year institutions that were studied. We find seven more of the separate two-year institutions having a voluntary cooperative plan worked out with the high school. This represented 35% of those studied. And we find three of the separate two-year institutions had a unified and coordinated program with the high school. This represented 15% of the two-year institutions studied. As we progress down one line we find the association schools. Here only six of those are entirely separate from the high school as far as guidance is concerned. Sixteen of them have worked out the voluntary cooperative program and six of them had a unified coordinated program. Then if we move down one more line we find the

four-year institutions one of them was entirely independent, two of them had worked out the voluntary cooperative plan and six of them were unified and coordinated. The conclusion that we can draw from this information is that in the association and the four-year institutions, the follow-through of vertical coordination of the guidance program is much better than for the two-year institution.

Courses Taken Out-of-Level

One other evidence of vertical integration would be to determine the percentage of courses taken out-of-level. Taking a course out-of-level is interpreted to mean either a twelfth grade student taking a thirteenth grade class or the reverse. If the curriculum is to serve the needs of all students this would be a desirable feature in some instances.

Percentage of 12th Grade Students Taking 13th or 14th Grade Subjects

Group of Subjects	Associations		
	Separate Guidance Group (6-592)*	Combined Guidance Group (13-1, 214)	Four-Year Junior Colleges (9-1,470)
Academic	1.8	6.4	18.3
Special	0.5	2.2	21.0
All Subjects	2.3	8.6	39.3

* The numbers in parentheses are, respectively, the numbers of junior college situations represented and the numbers of students in Grade 12 (Grade 11 in Texas systems) included in the samples.

Chart H

In Chart H in the appendix we find first of all the separate two-year institutions with separate guidance program. There were only six schools having an enrollment of 592 students. We find that 1.8% of the twelfth grade academic students are taking subjects at thirteenth grade level and .5% special students are taking subjects at thirteenth and fourteenth grade level. As we move over to the next column we find that now there is a combined guidance program and that we have thirteen institutions represented with a total enrollment of 1,214 students and that 6.4% of the academic students in the twelfth grade are taking subjects at thirteenth and fourteenth level; 2.2% of the special students are doing likewise. In the last column we have four-year junior college with the guidance program well coordinated for the years eleven through fourteen. There were nine such institutions represented and they have an enrollment of 1,070 students. We find that 18.3% of the academic students are taking some subjects at grades thirteen and fourteen even though they are twelfth grade students and 21% of the special students are taking subjects at grades thirteenth and fourteenth grade level even though they are twelfth grade students.

COURSES OUT-OF-LEVEL [2]

Percent of 13th Grade Students in High School Level Subjects

Group of Subjects	ASSOCIATIONS		
	Separate Guidance Group (7 364)*	Combined Guidance Group (13-1,126)	Four-Year Junior Colleges (9-1,021)
Academic	4.0	4.8	4.7
Special	0.3	9.4	12.6
All Subjects	4.3	14.2	17.3

* The numbers in parentheses are, respectively, the numbers of junior college situations represented and the numbers of first-year college students included in the samples.

Chart I

If we turn to Chart I and continue with the investigation of courses out of level this time to determine how many thirteenth grade students are taking subjects at the high school level we see that in the first column we have seven communities represented and there are 664 thirteenth grade students in these communities. About 4% of the thirteenth grade in the separate two-year institution are taking high school level subjects. If we move on over in the column with the combined guidance group we find thirteen communities represented and an enrollment of 1126 students in the thirteenth grade level and about 4.8% are taking some subjects at high school level. In the four-year junior colleges with the coordinated unified guidance program nine communities are represented and there are 1021 students in grade thirteen and we find 4.7% of these are taking subjects at high school level. These two charts are evidence of how well the guidance program will work in the association and the four-year institution.

EVIDENCE OF VERTICAL INTEGRATION

An unquestionably logical assumption in establishing and maintaining a four-year junior college must be the vertical integration of the traditionally separate high school and college levels of work.[2]

To study the integration the transcripts of several hundred students were examined for subject sequences between high school and college. Two types of sequences were observed; first, the type of sequence in which the student repeated the course taken in high school at college. This was designated as a questionable sequence. This type of sequence was found most often in American History, Economics and Chemistry.

QUESTIONABLE SEQUENCES

	Type of Organization							
	Separate Two-Year (16-1209)*		Association (22- 1635)		Four-Year Newer (5-220)		Four-Year Older (5-387)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
American History	221	18.3	187	11.4	45	20.5	38	9.8
Economics	82	6.8	131	8.0	20	9.1	9	2.3
Chemistry	245	20.3	327	20.0	74	33.6	57	14.7
All three subjects	548	45.3	645	39.4	139	63.2	104	26.9

* Number of junior colleges represented and the total number of students in the sample.

Chart J

One other evidence of a well integrated program would be to determine how many students transferring from high school to junior college repeat almost identically the same subjects in the junior college level that they had in high school. To do this the transcript of several hundred high school students were examined for their subjects in high school as well as those of junior college level. The findings are reported in Chart J. Those subjects where repetition was found frequently were in the areas of United States History, economics and chemistry and those are represented here. First of all in separate two-year institutions some sixteen were studied and a total of 1290 transcripts were examined and they found that 221 repeated American History in junior college or about 18.3%, 82 repeated economic, a course similar to that in high school or 6.8%, 245 repeated chemistry a similar course to that in high school or about 20.3%. If we examine the association schools of which 22 are studied and the transcripts of 1635 students examined, we find that 187 repeated American History which represented 11.4%, 131 repeated economics about 8%, 327 repeated chemistry or 20%. If we move on over to the four-year institution particularly the older four-year institution, one that has been established for a longer length of time and has an opportunity to work out its guidance program much better, we find that there were five institutions and 387 transcripts of students were examined. In the case of American History only 9.8% repeated, economics 2.3%, chemistry 14.7%. The conclusion from the chart is this: that if your guidance program is unified and coordinated there will be less repetition by students in exactly the same subject matter area.

GOOD SEQUENCE OF SUBJECTS

Numbers and percentages of transcripts showing certain commendable sequences of courses taken both in later years of high school and in junior college.

	Type of Organization							
	Separate Two-Year (16-1209)*		Association (22-1,635)		Four-Year Newer (5-220)		Four-Year Older (5-387)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1. Biology-Zoology	33	2.7	85	5.2	3	1.4	18	4.6
2. Biology-Botany	27	2.2	84	5.1	1	0.5	12	3.1
3. Chem.-Qualitative Analysis	26	2.2	77	4.7	16	7.3	15	3.9
4. 1, 2, 3 combined	86	7.2	246	15.0	20	9.1	45	11.6
5. Social Problems-Economics	102	8.4	121	7.4	18	8.2	30	7.8
6. Social Problems-Political Sci.	131	10.8	142	8.7	12	5.5	69	17.8
7. Social Problems-Sociology	59	4.9	17	1.0	0	0.0	21	5.4
8. 5, 6, 7 combined	292	24.2	280	17.1	30	13.6	120	31.0
1, 2, 3, 5, 6, 7 combined	378	31.3	526	32.2	50	22.7	165	42.6

* Number of junior colleges represented and the total number of students in the sample.

Chart K

Chart K is very much like Chart J first of all for the separate two-year, then the association, and then the four-year. Here we are looking for good guidance, good vertical coordination so that the same subject matter is not repeated. Such combinations were studied as biology-zoology, biology-botany, chemistry-qualitative analysis, social problems-economics, social problems-political science, social problems - sociology. If we examine the percentage columns for the separate two-year institution of the first three subject matter combinations, we find 7.2% of the students had worked out a good subject matter combination in going from high school years to junior college years. If we move on over to the association we find 15%, have good subject matter combinations in the older four-year institutions we find 11.6%. Now in the last three subject matter combinations in the social studies fields we move down to horizontal line 8 and over to the separate two-year institution we find that 24.2% had worked out satisfactory combination of subjects in going from high school to college so that they did not repeat subject matter areas, in the association 17.1%, in the older four-year institution junior college 31%. This chart shows that in the field of science good subject matter combinations high school to college are not as readily worked out as they are in the field of social studies. Possibly there's less tendency on the part of the college instructors to accept the science teaching in high school.

FACULTY, DEPARTMENTAL AND CURRICULUM PLANNING 2

To carry the study of integration still farther a study of current practices in faculty, departmental and curriculum planning was made.

NUMBER AND PERCENTAGE OF LOCAL PUBLIC JUNIOR COLLEGES OF THE DIFFERENT TYPES OF ORGANIZATION REPORTING CERTAIN SUPERVISORY ACTIVITIES AS SEPARATE FROM HIGH SCHOOL ONLY. BOTH SEPARATE FROM AND JOINT WITH HIGH SCHOOL, JOINT ONLY, AND NOT CARRIED ON.

Supervisory Activity and type of organization	Separate only		Separate and joint		Joint only		Not Carried on	
	No.	%	No.	%	No.	%	No.	%
Faculty Meetings								
Separate two-year (15)	12	80.0	3	20.0				
Association (25)	5	20.0	16	64.0	4	16.0		
Four-year (9)			2	22.2	7	77.8		
Departmental Meetings								
Separate two-year	12	80.00					3	20.0
Association	5	20.0	6	24.0	7	28.0	7	28.0
Four-year					6	66.7	3	33.3
Curriculum Planning								
Separate two-year	11	73.3					4	26.7
Association	8	32.0	5	20.0	7	28.0	5	20.0
Four-year			1	11.1	6	66.7	2	22.2

Chart L

In the left hand column we have faculty meetings first then departmental meetings then curriculum planning. Under each we have the separate two-year, the association and the four-year schools represented and as we move to the right we have vertical columns representing separate planning only, separate and joint planning and joint planning only. If we examine the figures involved we see that for the separate two-year unit, the faculty meetings are planned almost entirely separate even though the junior college and the high school are both members of the same public school system. This is also true of departmental meetings and of curriculum planning. As far as the association is concerned a large portion of their planning is done jointly and as far as the four-year institutions are concerned a larger part of their planning is done jointly only. This is just another bit of evidence in support of the fact that in a four-year junior college the vertical coordination as far as the guidance program is concerned, as far as subject matter is concerned, as far as faculty planning and curriculum planning is concerned is much better than for the separate two year.

COLLEGE PREPARATORY AND SEMI-PROFESSIONAL ENROLLMENTS IN JUNIOR COLLEGES

	Grades 11 & 12	Grades 13 & 14		College Preparatory		Semi-professional or Terminal
4-Compton College	2290	2839	507	2506		996
4-Napa Junior College	454	135	84	23		196
4-Vallejo College	957	388	146	534		1097
4-Stockton		855	617	775		697
4-Moberly Mo.	237	106	22	84		44
4-Meridan Miss.	608	296	75	371		373
4-Jefferson City Mo.	322	125	50	125		50
		Total		4418	Total	3447
		Percent		56%	Percent	44%
2-Joliet Ill.		564	93	674		18
2-Tyler Texas		302	74	338		38
2-Bay City		734	153	689		198
2-Flint		753	189	942		
2-Jackson		528	166	567		127
2-Grand Rapids		1416	496	1689		223
2-Muskegon		393	206	599		
			Total	6102	Total	604
			Percent	89.9%	Percent	10.1%

PERCENTAGE OF JUNIOR COLLEGES OFFERING ADULT-EDUCATION IN THE VARIOUS AREAS OF CURRICULA

Curriculum Area	Public Junior Colleges			Private Junior Colleges	Total of All Junior Colleges
	Small	Large	Total		
Preparatory to Higher Education	46.5	63.2	56.0	36.4	50.0
Non Preparatory	95.4	100.0	98.0	93.2	99.5
a. Vocational (shop)	83.7	94.7	90.0	65.9	82.6
b. Commercial	69.8	87.7	80.0	52.3	71.5
c. Technical	48.8	70.2	61.0	25.0	50.0
d. Agriculture	23.3	42.1	34.0	6.8	25.7
e. Cultural and Citizenship	67.4	73.7	71.0	54.6	66.0
f. Homemaking	27.9	57.9	45.0	11.4	34.7
g. Recreational	27.9	50.9	41.0	15.9	33.3

This Chart shows that 50% of the junior colleges have an adult education program in the college preparatory curriculum areas. In the non-preparatory curriculum areas practically all junior colleges have an adult education program. The vocational or shop area is the greatest with commercial, cultural, technical, homemaking and recreational.

ENROLLMENT OF REGULAR STUDENTS AND ADULT EDUCATION STUDENTS
IN JUNIOR COLLEGES WITH ADULT EDUCATION PROGRAMS.

(S. V. Matorana Junior College Journal 1948)

Classification of College	Enrollment of Regular Students	Enrollment of Adult Education Students	Total Enrollment	Percentage Adult Education Students are of Total.
Small Public	6,720	4,496	11,216	40.1
Large Public Excluding evening junior colleges	39,697	32,199	71,869	44.8
Evening junior Colleges only	13,352	20,148	33,500	60.1
All Large Public	53,949	52,347	105,396	49.7
Total Public	59,769	56,843	116,612	48.7
Private	12,311	4,931	17,242	28.6
All Junior Colleges	72,080	61,774	133,854	46.2

Per Student cost of operation of 135 Public Junior Colleges
(Research Bulletin, American Association of Junior Colleges, Oct. 1949)

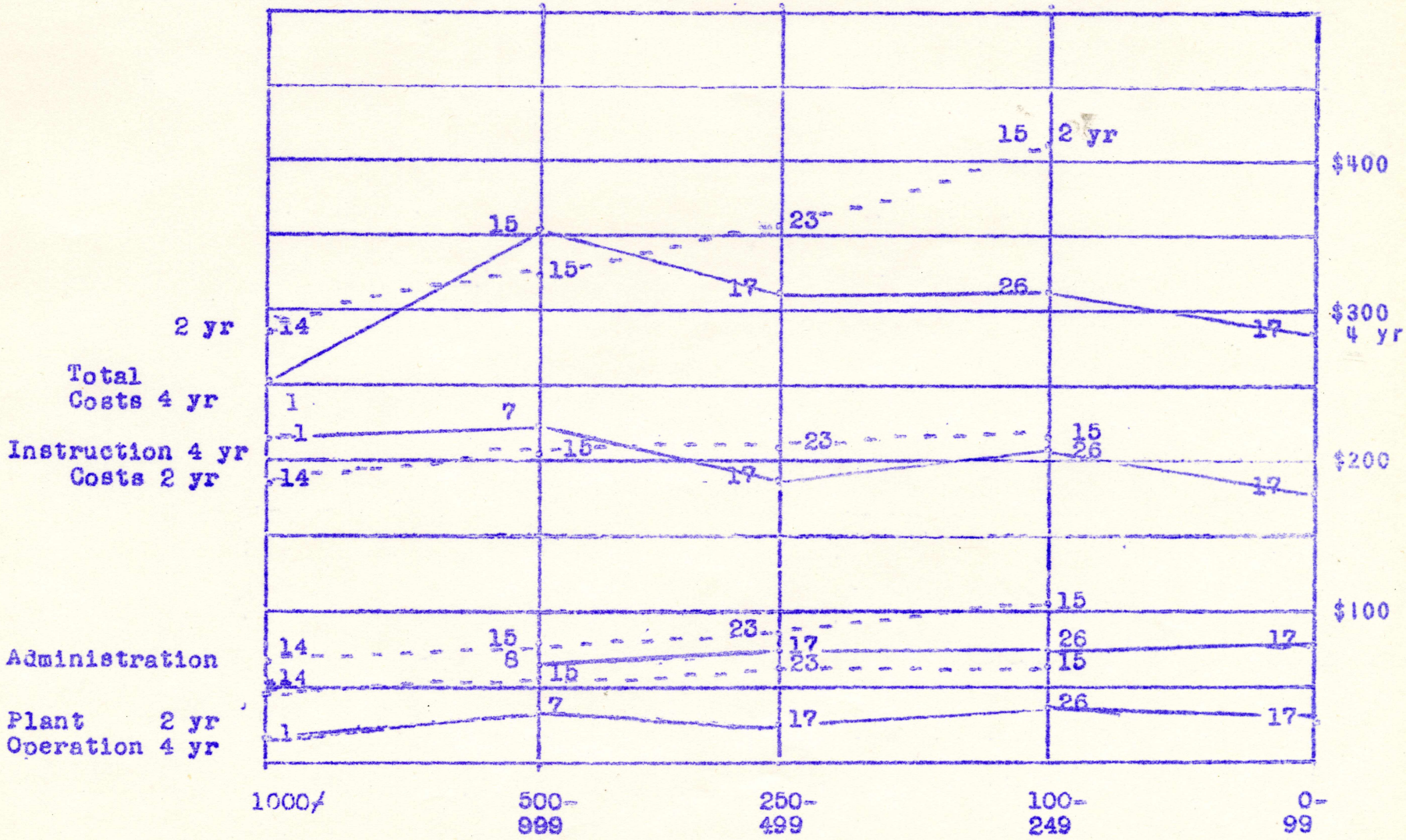


Chart P

In Chart P the total information taken from the American Association of Junior College Research Bulletin is shown. This information is similar to that of Chart No. 14 except it is more in detail. It would be of interest to persons who are very much interested in junior college finance. Starting at the left hand side we have the same categories of enrollment - 1000 or more, 599 to 250, 249 to 100 and 99 to 0. The total cost of operation is shown on the two graphs at the top. One for four-year which is shown by solid line and one for the two-year which is shown as a dotted line. Just beneath is shown the instructional cost for the two and four year program, then at the bottom are the administration costs for each and plant operation costs for each. Going back to the top of the total costs again, the numbers near each point on the curve or graph are numbers which indicate the number of junior colleges with that enrollment which were used in the study. In other words, with a thousand enrollment or more there were fourteen two-year schools and only one four-year school shown in the total costs curve. With enrollments of 500 and 999 there were 15 two-year schools and 15 four-year schools, with enrollments of 250 and 499; there are seventeen four-year and twenty-three two-year schools, with enrollments of 100 to 249; there were fifteen two-year schools and twenty-six four-year schools and with enrollments of 100 or less there were seventeen four-year schools. This chart shows very much what Chart No. 14 showed and that is for small institutions enrollments less than 500, the four-year plan of organization is much preferred as far as cost of operation is concerned.

COSTS PER STUDENT

(In the same Junior College 1937 to 1951)

Year	Non-Instructional Costs	Instructional Costs	Total Costs	Enrollment Res.	Enrollment Non.Res.	Enrollment Total	Tuition Res.	Tuition Non. Res.
1937-38	Not available	$154.00		207	134	341		
1938-39	Not available	146.00		240	168	408		
1939-40	$33.14	136.00	$169.14	213	170	383		
1940-41	36.32	165.00	201.32	204	136	340		
1946-47	35.89	159.00	194.89	382	370	752		
1947-48	41.52	194.00	235.55	341	357	698	120	170
1948-49	55.50	238.00	293.50	234	252	486	120	170
1949-50	55.30	282.00	337.30	224	253	477	120	170
1950-51						471	110	160

INCOME

Year	Tuition	County Normal	State Aid	Miscellaneous	Local Tax	Total	State Aid Per Student
1947-48	$117,581	$2,845	$26,371	$19,886	0	$166,683	$37.78
1948-49	76,727	2,943	50,275	9,581	$2,959	139,526	103.44
1949-50	75,131	3,000	50,275	10,000	27,668	138,406	105.40
1950-51						Ext.	135.00

1948 ENROLLMENTS

	Organization Date	Enrollment Grades 11 & 12	Enrollment Grade 13	Enrollment Grade 14
Napa	1941	454	135*	84
Parsons	1935	390	242	68
Pearl River	1923	115	181	48
Jefferson City	1939	322	125	50
Meridian	1937	608	296	75
Moberly	1931	237	106	22
Vallejo	1945	967	388	146
Totals		3083	1486	506
Percentage	13 or 14 is of (11 & 12)		48.2	17.4

ESTIMATED ENROLLMENT FOR A COMMUNITY COLLEGE IN MIDLAND

In 1955 we will have an enrollment of about 994 in grades 11 and 12. If we were to apply these percentages to our enrollment we could expect:

ENROLLMENT --	11th & 12th grade	13th grade	14th grade	Total
	994	479	173	652

* NOTE. This chart may be misleading because of the number of transfer students who enter at the 13th grade.

Chart R

All of the schools represented in Chart R have K6-4-4 plans of organization. The date of organization is shown just opposite the name, then the enrollments in grades eleven and twelve are shown, then finally the enrollments in grades thirteen and fourteen. If we were to add up the enrollments in grades eleven through twelve we would get a total of 3,083, grades thirteen 1,486, grades fourteen - 506. Then if we were to find the percentage that grades thirteen or fourteen are of grades eleven and twelve we would get the figures of 48.2% for grade thirteen and 17.4% for grade fourteen. We would have an enrollment of 994 students in grades eleven and twelve in 1955. Applying these percentages to this enrollment, we could expect an enrollment in grade thirteen to be 479 and the enrollment in grade fourteen to be 173 making a total of 652. This estimated enrollment is much greater than the one for Mr. Ells. Probably the error that entered into this enrollment is the transfer student that took his eleventh and twelfth grade education in some other community but transferred to one of these four-year institutions for his thirteenth and fourteenth year work and this probably upsets these figures considerably. We doubt these figures are at all valid.

DISTRIBUTION OF MIDLAND GRADUATES INTO COLLEGE AND VOCATIONAL AREAS

Year	Grade Group	Number of Students	Voc.	C.P.	In College Number	In College % of Grad.	% of Grad. in College	Capable Students not in Advanced Training
1946	B - A	17	12	5	9	53.0		8
	C/- B	47	29	18	8	17.0		39
	C - C/	55	33	22	11	20.0		
					4			
G - 157							22.0	
1947	B - A	23	5	18	19	82.0		4
	C/- B	50	27	23	20	40.0		30
	C - C/	63	40	23	15	23.8		
					10			
G - 200							32.0	
1948	B - A	38	13	25	24	65.0		14
	C/- B	39	16	23	17	43.5		18
	C - C/	79	41	38	27	34.2		
					10			
G - 223							34.9	
1949	B - A	38	3	33	28	72.0		10
	C/- B	50	15	35	29	58.0		21
	C - C/	72	42	30	27	37.6		
					8			
G - 248							37.0%	
1950	B - A	41	12	29	27	66.0		14
	C/- B	51	25	26	26	51.0		25
	C - C/	81	46	35	19	23.5		
					11			
G - 248							33.2%	
1951	B - A	43	17	26	16	37.3		27
	C/- B	54	26	24	28	52.0		26
	C - C/	84	67	17	23	27.4		
					10			
G - 248							30.9	

Chart S

This chart shows the distribution of Midland graduates into college and vocational areas beginning with the year 1945 extending through the year 1951. In the column which shows the percent of students who graduate and continue in college, we find that roughly 30% of our students who graduate continue on in college. If we examine the last column which is headed capable students not in advanced training and look at the numbers in the B to A group that did not continue on and the number in the C/ to B group that did not continue on, we find that about as many students in these grade groups do not continue on in college as those that do. In other words, in the year 1945, 46 students in these grade groupings continued on in some advanced training, 38 did not. In the year of 1948, 41 continued on, 32 did not. In the year of 1951, 44 continued on, 53 did not. If we examine these figures from this standpoint we find that about 40% of each graduating class is capable of advanced training beyond the twelfth grade. They have demonstrated their ability by receiving grades of C/ or better for the ninth through twelfth grade work. In the year of 1955 we will have a graduating class of 418 seniors. If 40% of these are capable of advanced training then 167 students of this group should continue on beyond the twelfth grade. Now let us assume that even though advanced training is available, some of these students would prefer to take a job and work and that others would prefer to continue on in a regular four-year institution rather than to go to community college and transfer

later. Let us say that as many as 50 people fall into these two categories. That would leave 117 people who could profit from a community college education in Midland some of them in the pre-professional areas and others in the advanced vocational areas. This figure of 117 students compares quite favorably with an earlier estimate of 125 students for the college in its first year of operation. In all probabilities about half of these students would continue on for their sophomore year. This would make in 1956 about 60 sophomores in enrollment. This with a freshman class of 117 to possibly 130 for the second year of operation would make a total enrollment of some place in the neighborhood of 180 to 190 students.

Let us see what the expected enrollment might be for the year 1961. In the year 1961 we should have 528 seniors. If 40% of these people are capable of some advanced training this number would be 211. Let us assume further that 50 of these students, even though they are capable and the community college education is available, they either prefer to work or else they prefer to continue on in a regular four-year institution. This would leave then 161 students continuing on in a junior college or community college as freshmen in the year 1962 since they graduated in the senior class beginning in September 1961. If half of these people or 80 continued on as sophomores the next year this would give us a total enrollment of approximately 241 full-time day students for the year of 1963.

The total gain in enrollment from 1956 with 177 students to 241 students in 1963 would give us approximately a gain of 64

students over a seven year period or a gain of nine students per year. This gain of nine students based on these figures is not quite as good as an estimated gain of 25 which was made earlier. The gain of 25 may be still a better figure depending upon how well we can work out the necessary terminal education for these students.

Survey of First Semester college grades received by Midland High School graduates compared to grades received in the same subjects in high school.

A total of 560 sets of grades in English, mathematics, science and languages were used. Twenty-five colleges are represented.

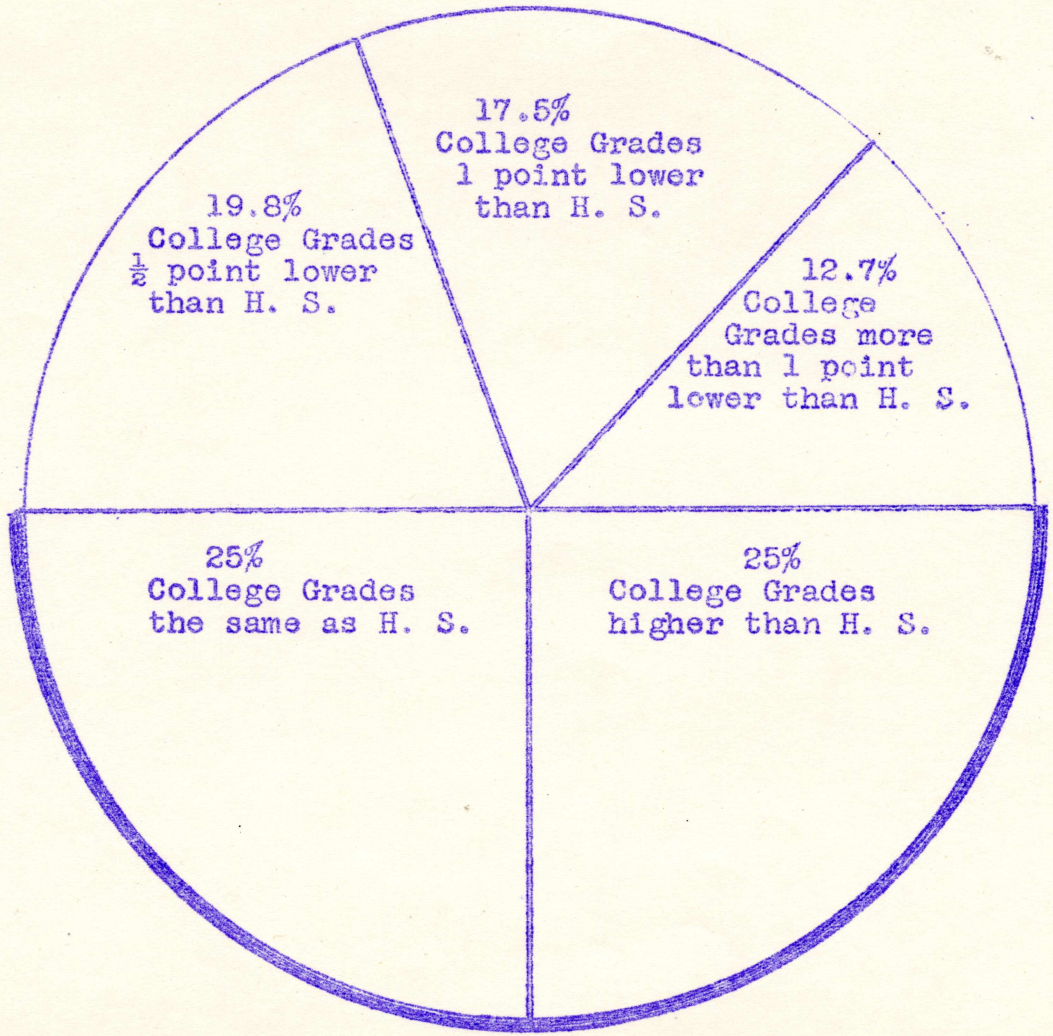


Chart T

Here we have a survey of the first semester college grades received by Midland High School graduates compared to the grades received in the same subjects in high school. A total of 560 sets of grades in English, mathematics, science and languages were used. Twenty-five colleges were represented. The chart shows if we begin in the lower right hand corner that twenty-five percent of the college students received grades higher in college than in high school. Then going to the left another 25% of these college students received the same grade in college that they received in high school in the same subject. Continuing on up to the left 19.8% of these people received grades one-half point lower in college than they received in high school in the same subjects. A half point, incidentally, means that if their grade in English in high school was B then their grade in English in college was C+. Continuing on 17½% received college grades one point lower than those received in high school in the same subject and 12.7% received grades in college more than one point lower than those received in high school in the same subject. All of these grades in this survey were for first semester college freshmen. We believe that this is an indication that we could establish a program of such caliber that our students would have little if any difficulty in transferring with full credit to a regular four-year institution.

February 16, 1951

CHART U

STUDY COMMITTEES TO REPORT TO MR. MOORE'S PROFESSIONAL STUDY GROUP ON THE PROPOSED COMMUNITY COLLEGE

Science Training

R. F. Boyer
N. Wright
A. W. Beshgetoor
W. H. Williams

Business Training

W. F. Stumpfig
T. B. Todd
Esther Foster
D. C. Ovaitt

Industrial Arts Training

L. J. Richards
R. G. Smith, Jr.
F. M. Booth, Jr.

Time Schedule for Meeting Held on February 7, 1951

1:10 p.m. Report from Business Training Committee, Mr. Stumpfig, Chairman

1:50 p.m. Report from Industrial Arts Committee, Mr. Smith, Chairman

2:30 p.m. Report from Science Training Committee, Mr. Beshgetoor, Chairman

A. Number of Employees in Hourly Research Classification as of April, 1950. This number has not substantially changed during the past year.

	April, 1950
Aromatics	1
BioChemical Research	3
Cellulose	4
Chemical Engineering	8
Coatings Technical Service	5
Electro Chemical	5
Magnesium	27
Main Laboratory	16
Organic Research	8
Physical Research	17
Putnam's Laboratory	1
Saran Development	11
Experimental Polymerization	10
Semi Plant	1
Spectroscopy	13
Strosacker's Lab., 258	4
Styrene	15
Styron	9
Plastics Technical Service	2
TOTAL	160

By Job Classification these figures breakdown as follows:

Senior Laboratory Technician	49
Laboratory Technician	52
Laboratory Assistant	43
Laboratory Helper	16
TOTAL	160

B. Increased employment of Laboratory Personnel.

About 5 to 10 new personnel in quantative analysis each, however, plant growth could possibly provide for 150 new personnel in the next 5 years.

C. Laboratory Helper:

General Educational Requirements for Laboratory Helper.

	Chem. Lab.	Physics Lab & Organic	Bio-Chemic
1. All Laboratory helpers jobs would require:			
High School Chemistry High School Algebra One additional science	quantative analysis	Physics	Biology
approximate percentage employed in the three general classifications	10%	80%	5%

2. Qualifications

a. High School graduate with better than average record in science.

b. Proven ability in mathematics - Chemistry and one other science

c. Shall pass an elementary arithmetic test.

3. Work Capabilities and Duties

a. Clean and wash equipment and maintain a neat orderly work place.

b. Follow directions

c. Work simple problems on slide rule.

d. Make elementary analyses and calculations.

e. Carry out simple laboratory operations under instructions.

f. Take and record accurate and orderly data.

g. Handle common chemical regents safely.

h. Use balances and ordinary simpler instruments in his laboratory.

i. Know and observe safety rules and know how to use safety equipment.

j. Prepare compositions under instructions.

D. Laboratory Assistant

1. Qualifications

a. Shall have met all of the prerequisites for advancement from Laboratory helper.

b. New men hired in at this classification shall have two years college training in science including mathematics, Chemistry and another science or two years in general laboratory work with a better than average record.

2. Work Capabilities and Duties

a. Work following instructions without close supervision.

b. Supply constructive suggestions from time to time.

c. Perform all duties of a Laboratory Helper when his work so requires.

d. Make use of helpers when required.

e. Make simple chemical and physical calculations.

f. Compile and tabulate data, make plots and curves and use handbooks.

g. Know the theory and use the slide rule.

h. Use the instruments in his laboratory properly, and know the principle involved in the simpler ones.

i. Know the location of, and work done in, the various service departments in the plant.

j. Recognize unlooked for results and record them.

E. Laboratory Technican:

1. Qualifications:

a. Shall have met requirements for advancement from Laboratory Assistant as set forth in contract.

b. In most laboratories it is desirable that he have sufficient versatility to be able, with instructions, to do most types of hourly jobs of a technical nature in the whole laboratory. He shall have acquired an advanced knowledge of chemistry, physics and mathematics.

c. New man cannot hire in at this level. He must follow the steps of advancement as set up in this agreement, hiring in not higher than the laboratory assistant level.

2. Work Capabilities and Duties

a. Perform all duties of those in classifications below him in his field of work when his work so requires.

b. Efficiently direct the activities of helpers when required.

c. Critically observe and evaluate procedure and data.

d. Have sufficient ability along scientific lines to carry out his work with only a little supervision.

e. Write preliminary reports under supervision, including description of work he has done, the observations he has made and the preliminary conclusions he has drawn.

f. Make sketches and work from sketches and blueprints.

g. Know and use the mathematics necessary in calculating the chemical and physical factors relating to his work.

h. Know and use principles of operation of all common equipment used in the laboratory.

i. Have a working knowledge of the properties of common laboratory and industrial materials used in his work such as glass, ceramics, plastics and metals.

Herbert Stoeri
Dorothy Minikel
John Linden
Mahlen Moore

February 7, 1951

REPORT OF COMMITTEE ON BUSINESS TRAINING

Members: W. F. Stumpfig
T. B. Todd
Esther Foster
D. C. Ovaitt

1. The committee approached the proposition of a community college by analyzing job classifications requiring business training of high school or community college level. Attached is a listing of these job classifications showing the number of people, male and female, presently employed and the number it is expected will be employed by 1955 based on a recent forecast of anticipated growth.

2. It also prepared job specifications for each classification. These specifications are likewise attached. It may be determined from these specifications the extent to which the proposed community college will prove of benefit. Generally speaking, a good high school training will qualify most students for a majority of these jobs, taking into consideration a period of in-service training which is usually required regardless of educational training. Possibly additional educational training in a community college may qualify the student to start at a higher level job, providing the additional training is patterned after the type of work for which the employee is required.

3. There were a few suggestions that were registered during the committee discussions which it is felt are worthy of note. These suggestions are:

(1) Students graduating from high school should have a better knowledge of spelling, grammar, and arithmetic. These are still fundamental requirements of practically all office jobs.

(2) Students should be encouraged to take typing even though they do not take shorthand. A great many jobs other than stenographic work require a certain amount of typing.

(3) A knowledge of chemistry is an asset for most jobs and a must for higher type jobs, such as technical secretaries and certain types of clerical work. In this latter case a Community College would definitely be of value.

(4) The development of good personality traits is extremely important, both from the standpoint of the employee getting along well with fellow workers as well as with individuals with whom he or she has contact in a business way. More training should be given in the art of courtesy and the ability to express oneself clearly in conversation, over the telephone and in business correspondence. Students should be encouraged to be aggressive but not overly so and to be unobtrusively curious. They should be taught to follow instructions diligently and, above all, to use good common sense. They should be neat and accurate in their work, willing to help others, have a good knowledge of business etiquette, be neat in appearance and dress, and value other people's property.

(5) Emphasis should be placed on the advantages of a sincere, honest desire on the part of the student to do a good job on whatever type work the employee is placed. The company has certain types of work that must be done and it is up to the employee to perform this work to the best of his or her ability. An honest attempt is made to place each employee on a job for which he or she is best suited. The quality of work the employee does on the job for which he or she has been selected will determine the progress that the employee will make. There are more top level jobs to be filled by capable employees than there are qualified employees to fill them.

4. If there is any further information that may be required, this committee will be glad to make every effort to procure it.

THE COMMITTEE ON BUSINESS TRAINING

fbp

Types of office jobs that can be filled by people with high school or Community College training and number of people presently employed in each job compared with anticipated requirements for 1955.

JOB CLASSIFICATION	1950 Male	1950 Female	1955 Male	1955 Female
Clerk	132	74	193	110
Cost	9	3	13	5
Estimating	7	2	10	3
Filing		23		34
Inventory	1	15	2	22
Order	19	3	27	5
Payroll		40		60
Typist	3	32	5	48
Key Punch Operator		21		30
Machine Operator - Duplicating		26		39
Mail Boy	6	1	6	
Messenger	3		5	
Office Supervisor	14		21	
Order Boy	6		9	
Receptionist		3		4
Secretary	13	41	20	60
Secretary - Technical	1	4	2	6
Stenographer	11	144	16	216
Telephone Operator		12		18
Teletype Operator		21		32
Transcriber		8		12
Typist	1	59	2	90
Totals	225	532	290	835

Clerk: (Male out in the plant)

This is a broad classification to cover all types of clerical work, not specifically listed. Practically every department has a certain amount of clerical work. The departments included in this general classification are Acccunting, Pruchasing, Sales, Traffic, and Production Plants.

The higher types of clerical work are usually performed by men that have had considerable training and experience either within the company or elsewhere. Routine clerical work is usually performed by girls, not because they are not capable of handling the higher type work, but because they do not remain on the job long enough to learn the more complicated operations. The average length of service for a girl is two to three years.

For the majority of routine clerical jobs, the employee is required to have a good basic business education which includes arithmetic, spelling, grammar, filing, bookkeeping, and proofreading; a knowledge of commercial papers such as debits, credits, bills of lading, orders, invoices, return orders, etc.; an understanding of business terms such as f.o.b. shipping point, freight allowances and equalizations, discounts, etc. Also, most jobs require a knowledge of business machines, such as manual and electric typewriters, adding and calculating machines, and the ability to dictate correspondence.

On the basis of these specifications, practically all clerical jobs require at least a high school education. Some of the higher type jobs require higher education in specialized fields such as accounting, chemistry, chemical engineering, business administration, etc. In some cases, this special knowledge is not used on the starting job but employees are picked with a view of placing them in higher level jobs after a period of training.

Cost Clerk:

Cost clerks keep a daily record of all the costs for construction and repair work. This work is based on individual contracts calling for certain specifications of materials, equipment and labor requirements. This demands a high degree of accuracy by the clerks in the reading and interpretation of invoices, bills and labor costs. The costs of materials and labor are posted to record sheets for each contract.

In addition, these clerks keep a detailed record of the costs of the garage, service station, railroad and a few of the laboratories. This requires a high degree of skill in posting costs and expenses from invoices of material, freight bills, and labor payrolls. Accuracy in decimals, percentages and fractions is mandatory and a general knowledge of arithmetic is of daily use. A considerable amount of filing is done in this work. Some typing and comptometer training would be helpful.

Estimating Clerk:

An estimating clerk keeps the office records of the estimators, who estimate major repair jobs in the repair shops and construction work.

Estimating Clerk: (Con't)

The clerk's duties consist of answering the telephone, checking and posting the I.B.M. tabulated labor sheets, and making analysis of the work orders as written by the repair shop.

This work is based on a thorough knowledge of filing, as a large part of the work is the collecting of costs filed back of each work order and then comparing the costs with the original estimate.

Typing is a desirable skill.

Filing Clerk:

A filing clerk should be able to read rapidly and correctly, and have a good memory to retain the important parts of correspondence. She should have a pleasant personality. She should be accurate and alert, as she sorts and files the correspondence. She is required to gather up the correspondence from the various offices, sort and file it in the correct place. She should be co-operative with others. A limited knowledge of typing is desired.

Inventory Clerk:

An inventory clerk keeps a daily record of the receipts, disbursements, number on hand, and the prices of each commodity in the material and supply accounts. These accounts are for supplies used in construction and repair work and for general plant service.

I.B.M. cards are the principal media for keeping these records. The original cards which are used in the stockroom at the time of the sale are checked by an inventory clerk for correct descriptions, catalog numbers, units of measure, and the proper account to be charged. I.B.M. punched cards and tabulated sheets are then made from these tickets. The punched cards are then checked and, if correct, are used as a basis for the distribution of cost to be charged.

Ability to read and understand terminology used on invoices, memos and orders is necessary for keeping inventories and prices. A thorough knowledge of arithmetic is required. Especially necessary is a skill in using fractions, decimals and percentages. This can be further emphasized by saying that the inventory clerk figures the price which is used when the supplies are sold. Comptometer and typing experience is desirable as both skills will be used frequently. Good clear handwriting is demanded.

Order Clerk:

This job requires some college education in business administration and if possible, some chemistry. Individuals are selected for this type of work with the view to advancing to higher level jobs in the home office or in a sales office.

The type of work performed by individuals in this classification is primarily the processing of customers' orders and the clerical work in the form of records, etc., associated with this operation. To do

the job efficiently requires a good understanding of business methods, pricing practices, a good memory, and well balanced judgment and common sense. This individual must be tactful, accurate, courteous, neat in appearance and dress, industrious on the job, and be able to assume responsibility. After a period of training, he will be required to make decisions of his own, to converse with individuals he must contact within the plant as well as communicate with customers by telephone and correspondence.

Actually, the details of the job itself can be performed by a high school graduate who has the ability and applies himself effectively, but the policy has been to employ college graduates with a view to training them for more important jobs. Possibly a Community College may be the answer to this problem providing the prospective employee patterns his course after what he plans to do following graduation.

Payroll Clerk:

The duties of a payroll clerk are many and varied although they are related to the figuring of an employee's paycheck and the distribution of the money paid to the accounts receiving the benefit of his services.

The clockcards are read for time of reporting for work and leaving at the end of the shift. This time is checked against the foreman's report sent in from the department in which the man works. I.B.M. cards are punched from the hours and rates entered on the clock cards by the payroll clerks. The I.B.M. punched cards then become the basis for the arithmetical computations, including the figuring of social security, federal income tax, etc., and finally the actual writing of the checks and the check register.

An extremely high degree of accuracy in writing the correct information, in checking for details of arithmetic and spelling and in filing is demanded. It should be pointed out that errors made in the paycheck result in either the Company losing money or in an unhappy employee.

Good writing and neatness in work is extremely important, as a figure written so carelessly that it can be read for another figure is almost a cardinal sin. Efficient work habits and ability to treat as confidential any information regarding a worker's income are essential to success as a payroll clerk. Although a short training period in operating a comptometer is generally given each new worker, pre-training is a very desirable qualification in a new employee. It is also desirable for a payroll clerk to be able to operate a typewriter.

Typist Clerk:

A typist clerk does general clerical work not requiring special schooling or training and requiring the use of typewriter in the accomplishment of a majority of the duties. She types letters, reports and other material from rough draft or corrected copy, files records and reports, and performs one or a combination of clerical duties as assigned. This girl should be alert, accurate, co-operative and neat in dress and work.

Key Punch Operator:

A Key Punch Operator uses a keyboard machine similar in operation and action to a typewriter. A card is inserted in the key-punch either manually or automatically, and the carriage is positioned for the punching or perforating operation. The operator refers to the written document or source data and being advised of the type of information to be selected from it, proceeds to transcribe that information on the tabulating card by striking in specified sequence the corresponding numbers or letters on the keyboard. With each depression of a key, a hole is punched in the proper card column on the tabulating card, (which has been specially designed), and the card is automatically spaced to the next punching position. Upon completion, the card is automatically ejected from the machine.

This job requires that the operator spend most of the working day operating the key punch and is often required to work rapidly for long periods of time. She must possess dexterity of fingers, hands and arms in manipulating key boards, handling cards and pages of copy; she must possess eye-hand co-ordination in depressing keys, turning pages and inserting or removing cards; she must possess keeness of vision in steadily scanning columns of figures; she must possess a memory for oral directions; and she must be able to concentrate amid distractions. Good personal appearance is beneficial. Ability to get along with others with whom the worker is in continuous close contact is important.

Machine Operator - Duplicating:

This work requires training in the operating of duplicating equipment which includes hectograph, mimeograph, multilith, and multigraph. Employees working in the Duplicating Department should also understand filing and should be able to type at least 50 words per minute. Vari-typer training is helpful. Proofreading is probably one of the most important parts of any duplicating job. Ability to do good proofreading definitely would be an asset to any new employee.

Mail Boy:

This job consists of the pick-up, sorting, and delivery of outgoing and inter-departmental mail. It requires that the employee be conscientious, accurate, and apply himself, as any inaccuracies or delays will hold up the delivery of mail which in many cases may effect the work of others. A high school education is not required but is desirable if the employee hopes to advance to a higher level job. Neatness in work and dress is important.

Messenger:

See Mail Boy

Office Supervisor:

The office supervisor more or less manages the clerical and detail work of the office and relieves the manager of the department of these

details. In this way, the time of the manager is freed for the more direct problems of supervision and operations. The office supervisor is responsible for keeping the necessary records and preparing the reports that are required by his management. He has charge of the office personnel and handles personnel problems in this group. He plans and schedules the work in the office and develops procedures for the efficient functioning of the department. It is a position that requires considerable prior experience with the company and usually employees selected for this position are taken from higher type clerical jobs such as order clerks, purchasing clerks, accounting clerks, etc. A college education is a requirement, however, graduation from a Community College in a course providing the proper business background may suffice.

Order Boy:

See Mail Boy

Receptionist:

The receptionist receives clients or customers coming into an establishment, ascertains the individual's wants and directs him accordingly; obtains caller's name and makes arrangements for him to see the desired person; directs or shows the caller to his destination in the establishment, keeps a record of the callers, time of call, nature of business and person called on. This person should have a very pleasant and pleasing personality, be tactful and able to meet the public with a smile.

Secretary:

A secretary performs general office work in relieving executives of clerical duties; takes dictation using shorthand; transcribes dictation or the recorded information reproduced on a transcribing machine; makes appointments for executive and reminds him of them; interviews people coming into the office, directing to other workers those who do not warrant seeing the executive; answers and makes phone calls; handles personal and important mail, and maintains confidential files, records, etc., writes routine correspondence on own initiative. She must be accurate, exacting in her work with a good knowledge of the English language. She must be courteous, have good manners, tact and self-control, together with resourcefulness, initiative, firmness and reserve.

Stenographer:

A stenographer takes dictation in shorthand or correspondence, reports and other matter and transcribes dictated material accurately. She may transcribe information from a sound producing record. She is required to be versed in the technical language and terms used in a particular profession or industry with a basic knowledge of English and spelling. She might be required to make and receive phone calls and should have a pleasing personality, willing to co-operate with others, neat in dress and work, accept responsibility and criticism graciously.

Male stenographers should have two years at least of Business Administration including stenography, typing, accounting and some chemistry. Well prepared male stenographers could work into administrative positions.

Telphone Operator:

A telephone operator should have switchboard training. Her voice and diction should be pleasant and clear. She should have a pleasant personality. A general knowledge of basic English is essential. She should be alert with manual dexterity and have the ability to retain composure under constant stress.

Teletype Operator:

A teletype operator should be an accurate and speedy typist. She should be alert and quick after being trained to operate the several teletype machines, very co-operative with others, pleasant and pleasing personality, and have a good knowledge of English and spelling. Hearing should be good, diction clear and voice pleasant.

Transcriber:

A transcriber should be able to transcribe information from a sound producing record. She is required to be versed in the technical language and terms used in a particular profession or industry and should have a basic knowledge of English and spelling. She might be required to make and receive phone calls. She should be willing to co-operate with others, possess a pleasing personality, and be neat in dress and accurate and neat in work. She should accept responsibility and criticism graciously.

Typist:

A typist typewrites letters and reports, addresses envelopes, copies data from one record to another, fills in report forms and does miscellaneous typing, all the work being routine or straight copy from rough draft or corrected copy. She should be consistent in speed and accurate in typing, alert, very co-operative, pleasant and willing to do whatever asked and neat in dress and work.

Residence:

Breakdown of location of residence of office personnel.

City	338 employees
County outside of city	127 employees
Out of county	292 employees

Herbert Stoeri
John Linden
Dorothy Minikel
Mahlen Moore

The City of Midland
Interview with Mr. Biery, City Manager
May 3, 1951

Of 120 employees 50% may be classed as laborers.

Turnover: Approximately 3 out of 12 office personnel, yearly.

Training

College	Draftsmen Instrument Men Police and Firemen - 2 yrs. Engineering Dept. -- 50% of 10 employed have 2 yrs. college	
Non-college	Roadmen Inspectors Some draftsmen	
High School Graduates	Office personnel.	Prefer high school graduates to more experienced girls - Would rather train them for their specific jobs.

Courses which could prove valuable:

*Machine Shop
*Welding
Truck Driving
Janitor Service
Penmanship
*Advanced Typing
*Dictation
*Office Machines
*Public Relations (similar to Dale Carnegie course)
Art of answering the telephone
Library Assistants

Probable Changes in the Next 10 Years:

Office work more mechanized
Especially trained fire inspectors (for preventive measures)

Ruth Allen
Dorothy Worcester - Chairman

EDUCATIONAL NEEDS IN INDUSTRIAL ARTS FIELD

I. Shops and Service Division - Present program for journeymen

*a. Blueprint reading and sketching for all trades.

*b. Shop mathematics for all trades.

*c. Isometric drawing for pipe fitters.

*d. D. C. and A. C. theory for electric shop.

*e. Physics review for Instrument Dept.

f. Instrument courses for Instrument Dept.

*g. Chassis and Engines for Garage.

*h. Driver Training Course.

i. Layout for sheet metal men, lead shop, and boiler shop.

j. Shop theory and metallurgy for machinists.

k. Ford truck training program.

*l. Electric and gas welding.

II. Proposed Training Programs

*a. Electronics.

b. Stockroom course.

c. Plant mechanics training.

*d. Electrical laboratory course.

*e. National Electrical Code.

f. Pilot plant operators training course.

g. Estimating course.

h. Plant clerks training course.

1. Accounting, typing, answering telephone, knowledge of Dow stenographers manual, word study, spelling, definitions, etc.

*i. Refrigeration course.

III. Possible Needs - No plans being laid at present time.

*a. Effective speaking and human relations - Dale Carnegie Course.

*b. Industrial psychology.

*c. Economics.

d. Labor Relations

e. Methods Improvement, job efficiency and/or personal efficiency.

*f. Engineering English and report writing.

g. Composition of metals.

h. Employee rating seminars for foreman.

i. Instructor training course.

j. Rectifiers.

k. Power distribution.

*l. Drafting courses - women and men.

*m. Training for tracing department.

n. State Plumbing Code.

McKay Press
May 1, 1951

Interview with Mr. Wm. Hopkins

I. Employees
  A. Present
    1. Office
      a. Qualifications
        * (1) prefers business college graduates to high school graduates
        (2) prefered experienced help

      b. Number
        (1) creative and sales - 2
        (2) stenographic - 6 - 8

    2. Shop
      a. Employs only experienced men - at least 4 years of apprenticeship elsewhere

  B. Future
    1. Hopes to at least double personnel in next ten years

II. Use for post-high school education
  A. Office
    * 1. More mature personnel are useful
    2. General background courses useful
    3. Courses which apply directly
      a. Advertising
      b. Commercial art
      c. Advanced business education
      d. Copy writing
      e. Sales
      f. Creative writing for advertising

  B. Shop
    1. Training for printing trades is valuable only as it makes it possible for apprentices to advance more quickly. Apprenticeship would still be necessary. No opening for apprentices in Midland.

Florence Hazlett

Dorothy Worcester

MIDLAND DAILY NEWS

Interview with Mr. Gordon Phillips and Mr. Norman Rumple

I. Employment turnover
   1. Total yearly average - 25.
   2. Do not anticipate any great change in the next ten years.

II. Education requirements
   1. College education or extensive experience for key people in news department.
   *2. For rest of news department and other department (advertising, sales, printing, photography) high school graduation is sufficient.
   *3. Use graduates of Bay City High School now for printing jobs.

III. Suggestions for improving curriculum of Midland High School
   *1. Printing courses in either 11 & 12 or 13 & 14th grades.
   2. Graduates of 14th year would be useful because of more maturity and broader background.
   3. Great need for students of journalism to start typing earlier and have two years of it.
   4. Most students need better foundation in spelling, arithmetic, and typing.
   *5. Adult courses would be useful to employees, but not necessarily required for advancement. Most useful
      -Advanced typing
      -Social sciences (and general education as a background for understanding current problems.)
   6. Would like to be included in the co-op program in the future when, and if, it would benefit both the News and the student.

Florence Hazlett

Dorothy Worcester

MIDLAND HOSPITAL

The following are the results of two separate meetings with hospital personnel for the purpose of determining their future needs and the extent to which a Community College might meet those needs.

A. Immediate needs that might be met by the present high school. Increase in personnel needed within the next 2 years with the following qualifications:

1. More specialized training in commercial subjects:

* Examples: transcribing of wire recordings
cross indexing
basic knowledge of insurance principles
filing
posting machine operation
how to write a good business letter

2. Home Economics, Biology, Physical Education could stress the following:

* Examples: personal appearances
personal hygiene
medical terminology
proper diets
care of equipment

3. General

* Examples: public relations
courtesy
manners
knowledge of the city
personality development

B. Future needs

1. Local needs for nursing school, doubtful.

2. Need for aids, practical nurses, kitchen help, maintenance help will increase as plant increases. (180 beds by next year eventually expanded to 240 beds.)

3. Suggested courses: (for 13-14 grades)

* Examples: cost accounting
insurance billing
legal aspects of medical records
dietetics
psychology - anatomy
laboratory technique
college biology
hygiene

Dorothy Campbell
John Harrold

Report on the Meeting with the Chamber of Commerce
and the Needs Committee of Grades 13-14.

The committee assigned to meet with the Midland Chamber of Commerce consisted of the following members: Florence Hazlett, John Linden, and Leitha Perkins, chairman.

Representatives of the Chamber of Commerce, C. E. Arnold, Leo Bliss, and T. C. Mahar, were very interested in the information given by the school committee concerning the study being made of the possibility of a Community College for Midland. They expressed a willingness to make a survey of members of the Chamber of Commerce on these points: (1) what members felt their employer needs would be in five years from now; and (2) to what extent a Community College in Midland would help meet those needs.

Dr. George Stanford, who is chairman of the Education Committee of the Chamber of Commerce, was designated as the one who should appoint a special committee to work on such a survey. Mr. Arnold's estimate was that six months would be necessary for making the study. The desirability of meetings with Dr. Stanford's committee was discussed, with the final word on the matter being that Dr. Stanford was to notify the school committee when a meeting would be helpful.

Florence Hazlett
John Linden
Leitha Perkins

Chart V

Midland Employment Survey
January 1, 1952

Business Education

Clerks	M		36
	F		82
Clerk-Typist	M		12
	F		81
Clerk-Stenographers	M		16
	F		12
Secretary	M		18
	F		52
Secretary, Conference	F		8
Secretary, Stenographer	F		4
Secretary, Technical	M		5
	F		10
Stenographer, Technical	F		1
Stenographer	M		24
	F		210
Typists	M		8
	F		49
Teletype operator Receptionist (Doctor's office) Credit Manager Secretary Cashier			1 14 1 3
Bookkeeping	M		2
	F		18
Tellers	M		5
	F		10
Loan Clerk	M		1
Radio Announcers			3
Writer - Radio			1

Engineering			
	Chemical		49
	Electrical		47
	Mechanical		47
	Power		1
	Sanitation		1
	Civil		8
	General Plant Supervisor		1
Industrial Arts			
	Draftsman		6
	Draftsman First Class		6
	Second Class		8
	Engineering		2
	Tracer	M	25
		F	
	Machinists Helper		15
	Senior Helper		9
	Senior Apprentice		2
	Journeyman R. P.		14
	Journeyman B.		18
	Journeyman		39
	Mechanical		4
	Research		
	Specimen		2
	Sp Exp		1
	Printer		5
Science			
	Industry		
	Laboratory Helper		22

Laboratory Assistant		51
Laboratory Technician		63
Senior Laboratory Technician		57
Chemist		
Physicist		
Radio Engineer (1st. Class)		3
Nurse (RN)		15
Dental Hygienist		2
Dental Assistant		1
Optical Technician		1
Fitter and Despenser (optical glasses)		1
Radio Technician		2
Dental Technician		1
Projectionist (Movie theatre)		4
Shops and Service		
Boiler Shop		
Boiler Makers		67
Welders		16
Flangers		3
Blacksmiths		4
Layout men		10
Pipe Shop		
Coverers		79
Steam trap repairmen		14
Fabricators		11
Fitters		249
Welders		167

Construction	
Roofers	29
Millwrights	28
Riggers	23
Masons	21
Maintenance and Construction	1140
Mill and shop men	5
Electric Shop	
Refrigeration	5
Electricians (field)	163
Electricians (shop)	12
Garage	
Mechanics	32
Body men	8
General Service (tires-refrigeration)	6
Automotive Service	2
Machine Shop	
Tool makers	8
Scale men	6
Tinsmiths	34
Machinists (outside repair)	37
Machinists (inside)	43
Machinists (bench)	21
Paint Shop	
Brush painter	129
Spray painter	12
Stencil painter	2
Sign painter	1

Instrument Department

Instrument men			29
Welding			
Apprentice			3
Sr. Apprentice			
Journeyman			119
Journeyman Set-up			7
Journeyman Butt-welder			
Senior Butt-welder			
Photographers	M		4
	W		2
Plumber			6
Advertising			
Display			1
Artist			2